SEQUENCE LISTING

<110>	Rosanne	M. Crooke
	Mark J.	Graham

<120> ANTISENSE MODULATION OF STEAROYL-COA DESATURASE EXPRESSION

<130> ISPH-0590US.P1

<150> US 09/918,187 <151> 2001-07-30

<160> 418

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 1

tccgtcatcg ctcctcaggg

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 2

atgcattctg cccccaagga

20

<210> 3

<211> 5221

<212> DNA

<213> Homo sapiens



PATENT TRADEMARK OFFICE

<220>
<221> CDS
<222> (236)...(1315)

<400> 3

ataaaagggg getgaggaaa taceggacae ggteaceegt tgeeagetet ageettaaa 60 tteeeggete ggggacetee acgeacegeg getagegeeg acaaceaget agegtgeaag 120 gegeegegge teageggta eeggegget tegaaacege agteeteegg egaceeegaa 180 eteegeteeg gageeteage eecetggaaa gtgateeegg cateegaag eeaag atg 238

1

ccg gcc cac ttg ctg cag gac gat atc tct agc tcc tat acc acc acc 286
Pro Ala His Leu Leu Gln Asp Asp Ile Ser Ser Ser Tyr Thr Thr Thr

5 10 15

acc acc att aca gcg cct ccc tcc agg gtc ctg cag aat gga gga gat 334
Thr Thr Ile Thr Ala Pro Pro Ser Arg Val Leu Gln Asn Gly Gly Asp
20 25 30

aag ttg gag acg atg ccc ctc tac ttg gaa gac gac att cgc cct gat 382 Lys Leu Glu Thr Met Pro Leu Tyr Leu Glu Asp Asp Ile Arg Pro Asp 35 40 45

ata aaa gat gat ata tat gac ccc acc tac aag gat aag gaa ggc cca 430

Ile Lys Asp Asp Ile Tyr Asp Pro Thr Tyr Lys Asp Lys Glu Gly Pro

50 60 65

agc ccc aag gtt gaa tat gtc tgg aga aac atc atc ctt atg tct ctg 478
Ser Pro Lys Val Glu Tyr Val Trp Arg Asn Ile Ile Leu Met Ser Leu
70 75 80

cta cac ttg gga gcc ctg tat ggg atc act ttg att cct acc tgc aag 526 Leu His Leu Gly Ala Leu Tyr Gly Ile Thr Leu Ile Pro Thr Cys Lys 85 90 95

ttc tac acc tgg ctt tgg ggg gta ttc tac tat ttt gtc agt gcc ctg 574
Phe Tyr Thr Trp Leu Trp Gly Val Phe Tyr Tyr Phe Val Ser Ala Leu
100 105 110

ggc	ata	aca	gca	gga	gct	cat	cgt	ctg	tgg	agc	cac	cgc	tct	tac	aaa	622
Gly	Ile	Thr	Ala	Gly	Ala	His	Arg	Leu	Trp	Ser	His	Arg	Ser	Tyr	Lys	
	115					120					125					
gct	cgg	ctg	ccc	cta	cgg	ctc	ttt	ctg	atc	att	gcc	aac	aca	atg	gca	670
Ala	Arg	Leu	Pro	Leu	Arg	Leu	Phe	Leu	Ile	Ile	Ala	Asn	Thr	Met	Ala	
130					135					140					145	
ttc	cag	aat	gat	gtc	tat	gaa	tgg	gct	cgt	gac	cac	cgt	gcc	cac	cac	718
Phe	Gln	Asn	Asp	Val	Tyr	Glu	Trp	Ala	Arg	Asp	His	Arg	Ala	His	His	
				150					155					160		
aag	ttt	tca	gaa	aca	cat	gct	gat	cct	cat	aat	tcc	cga	cgt	ggc	ttt	766
Lys	Phe	Ser	Glu	Thr	His	Ala	Asp	Pro	His	Asn	Ser	Arg	Arg	Gly	Phe	
			165					170					175			
ttc	ttc	tct	cac	gtg	ggt	tgg	ctg	ctt	gtg	cgc	aaa	cac	cca	gct	gtc	814
Phe	Phe	Ser	His	Val	Gly	Trp	Leu	Leu	Val	Arg	Lys	His	Pro	Ala	Val	
		180					185					190				
aaa	gag	aag	ggg	agt	acg	cta	gac	ttg	tct	gac	cta	gaa	gct	gag	aaa	862
Lys	Glu	Lys	Gly	Ser	Thr	Leu	Asp	Leu	Ser	Asp	Leu	Glu	Ala	Glu	Lys	
	195					200					205					
ctg	gtg	atg	ttc	cag	agg	agg	tac	tac	aaa	cct	ggc	ttg	ctg	ctg	atg	910
Leu	Val	Met	Phe	Gln	Arg	Arg	Tyr	Tyr	Lys	Pro	Gly	Leu	Leu	Leu	Met	
210					215					220					225	
tgc	ttc	atc	ctg	ccc	acg	ctt	gtg	ccc	tgg	tat	ttc	tgg	ggt	gaa	act	958
Cys	Phe	Ile	Leu	Pro	Thr	Leu	Val	Pro	Trp	Tyr	Phe	Trp	Gly	Glu	Thr	
				230					235					240		
ttt	caa	aac	agt	gtg	ttc	gtt	gcc	act	ttc	ttg	cga	tat	gct	gtg	gtg	1006
Phe	Gln	Asn	Ser	Val	Phe	Val	Ala	Thr	Phe	Leu	Arg	Tyr	Ala	Val	Val	
			245					250					255			
ctt	aat	gcc	acc	tgg	ctg	gtg	aac	agt	gct	gcc	cac	ctc	ttc	gga	tat	1054
Leu	Asn	Ala	Thr	Trp	Leu	Val	Asn	Ser	Ala	Ala	His	Leu	Phe	Gly	Tyr	

cgt cct tat gac aag aac att agc ccc cgg gag aat atc ctg gtt tca 1102
Arg Pro Tyr Asp Lys Asn Ile Ser Pro Arg Glu Asn Ile Leu Val Ser
275 280 285

ctt gga gct gtg ggt gag ggc ttc cac aac tac cac cac tcc ttt ccc 1150 Leu Gly Ala Val Gly Glu Gly Phe His Asn Tyr His His Ser Phe Pro 290 295 300 305

tat gac tac tct gcc agt gag tac cgc tgg cac atc aac ttc acc aca 1198

Tyr Asp Tyr Ser Ala Ser Glu Tyr Arg Trp His Ile Asn Phe Thr Thr

310 315 320

ttc ttc att gat tgc atg gcc gcc ctc ggt ctg gcc tat gac cgg aag 1246
Phe Phe Ile Asp Cys Met Ala Ala Leu Gly Leu Ala Tyr Asp Arg Lys
325 330 335

aaa gtc tcc aag gcc gcc atc ttg gcc agg att aaa aga acc gga gat 1294 Lys Val Ser Lys Ala Ala Ile Leu Ala Arg Ile Lys Arg Thr Gly Asp 340 345 350

gga aac tac aag agt ggc tga gtttggggtc cctcaggttt cctttttcaa 1345 Gly Asn Tyr Lys Ser Gly *

aaaccagcca ggcagaggtt ttaatgtetg tttattaact actgaataat gctaccagga 1405 tgctaaagat gatgatgtta acccattcca gtaccagtatt cttttaaaat tcaaaagtat 1465 tgaaagccaa caactctgcc tttatgatgc taagctgata ttatttcttc tcttatcctc 1525 tctctcttct aggcccattg tcctctttt cactttattg ctatcgccct cctttccctt 1585 attgcctccc aggcaagcag ctggtcagtc tttgctcagt gtccagcttc caaagcctag 1645 acaacctttc tgtagcctaa aacgaatggt ctttgctcca gataactctc tttccttgag 1705 ctgttgtag ctttgaagta ggtggcttga gctagagata aaacagaatc ttctgggtag 1765 tcccctgttg attatctca gcccaggctt ttgctagatg gaatggaaaa gcaacttcat 1825 ttgacacaaa gcttctaaag caggtaaatt gtcgggggag agagttagca tgtatgaatg 1945 acctaatgag gacttcaagc cccaccact agcatgcttc ctttctccc tggctcgggg 2005 taaaaagtgg ctgcggtgtt tggcaatgct aattcaatgc cgcaacatat agttgaggct 2125

ttcttttctt tttttcttta ataacaagga gatttcttag ttcatatatc aagaagtctt 2185 gaagttgggt gtttccagaa ttggtaaaaa cagcagctca tggaattttg agtattccat 2245 gagetgetea ttacagttet tteetettte tgetetgeea tetteaggat attggttett 2305 cccctcatag taataagatg gctgtggcat ttccaaacat ccaaaaaaag ggaaggattt 2365 aaggaggtga agtcgggtca aaaataaaat atatacat atatacattg cttagaacgt 2425 taaactatta gagtatttcc cttccaaaga gggatgtttg gaaaaaactc tgaaggagag 2485 gaggaattag ttgggatgcc aatttcctct ccactgctgg acatgagatg gagaggctga 2545 gggacaggat ctataggcag cttctaagag cgaacttcac ataggaaggg atctgagaac 2605 ctagatatta ggtccattca ttaattagtt ccagtttctc cttgaaatga gtaaaaacta 2725 gaaggettet etecacagtg ttgtgeeeet teacteattt ttttttgagg agaagggggt 2785 ctctgttaac atctagccta aagtatacaa ctgcctgggg ggcagggtta ggaatctctt 2845 cactaccctg attettgatt cetggeteta ceetgtetgt ceettttett tgaccagate 2905 tttctcttcc ctgaacgttt tcttctttcc ctggacaggc agcctccttt gtgtgtattc 2965 agaggcagtg atgacttgct gtccaggcag ctccctcctg cacacagaat gctcagggtc 3025 actgaaccac tgcttctctt ttgaaagtag agctagctgc cactttcacg tggcctccgc 3085 agtgteteca cetacaeece tgtgeteeec tgecacaetg atggeteaag acaaggetgg 3145 caaaccetee cagaaacate tetggeecag aaageetete teteeeteee teteteatga 3205 ggcacagcca agccaagcgc tcatgttgag ccagtgggcc agccacagag caaaagaggg 3265 tttattttca gtcccctctc tctgggtcag aaccagaggg catgctgaat gccccctgct 3325 tacttggtga gggtgccccg cctgagtcag tgctctcagc tggcagtgca atgcttgtag 3385 aagtaggagg aaacagttet cactgggaag aagcaaggge aagaacecaa gtgeetcaee 3445 tegaaaggag geeetgttee etggagteag ggtgaaetge aaagetttgg etgagaeetg 3505 ggatttgaga taccacaaac cctgctgaac acagtgtctg ttcagcaaac taaccagcat 3565 tccctacagc ctagggcaga caatagtata gaagtctgga aaaaaacaaa aacagaattt 3625 gagaaccttg gaccactcct gtccctgtag ctcagtcatc aaagcagaag tctggctttg 3685 ctctattaag attggaaatg tacactacca aacactcagt ccactgttga gccccagtgc 3745 tggaagggag gaaggcettt ettetgtgtt aattgegtag aggetaeagg ggttageetg 3805 gactaaaggc atccttgtct tttgagctat tcacctcagt agaaaaggat ctaagggaag 3865 atcactgtag tttagttctg ttgacctgtg cacctacccc ttggaaatgt ctgctggtat 3925 ttctaattcc acaggtcatc agatgcctgc ttgataatat ataaacaata aaaacaactt 3985 teaettette etattgtaat egtgtgeeat ggatetgate tgtaceatga eeetacataa 4045 agtgtgtctg ctgagtaagg aacacgattt tcaagattct aaagctcaat tcaagtgaca 4165 cattaatgat aaactcagat ctgatcaaga gtccggattt ctaacagtcc ctgctttggg 4225 gggtgtgctg acaacttagc tcaggtgcct tacatctttt ctaatcacag tgttgcatat 4285 gageetgeee teacteecte tgeagaatee etttgeacet gagaecetae tgaagtgget 4345 ggtagaaaaa ggggcctgag tggaggatta tcagtatcac gatttgcagg attcccttct 4405 qqqcttcatt ctgqaaactt ttgttagggc tgcttttctt aagtgcccac atttgatgga 4465

atggttgtag catttaaaat ggaaaatttt ctccttggtt tgctagtatc ttgggtgtat 4585 tctctgtaag tgtagctcaa ataggtcatc atgaaaggtt aaaaaagcga ggtggccatg 4645 ttatgetggt ggttaaggee agggeetete eaaceaetgt geeaetgaet tgetgtgtga 4705 ccctgggcaa gtcacttaac tataaggtgc ctcagttttc cttctgttaa aatggggata 4765 ataatactga cctacctcaa agggcagttt tgaggcatga ctaatgcttt ttagaaagca 4825 ttttgggatc cttcagcaca ggaattctca agacctgagt attttttata ataggaatgt 4885 ccaccatgaa cttgatacgt ccgtgtgtcc cagatgctgt cattagtcta tatggttctc 4945 caagaaactg aatgaatcca ttggagaagc ggtggataac tagccagaca aaatttgaga 5005 atacataaac aacgcattgc cacggaaaca tacagaggat gccttttctg tgattgggtg 5065 ggattttttc cctttttatg tgggatatag tagttacttg tgacaaaaat aattttggaa 5125 taatttotat taatatoaac totgaagota attgtactaa totgagattg tgtttgttoa 5185 taataaaagt gaagtgaatc taaaaaaaaa aaaaaa 5221 <210> 4 <211> 17 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 4 gatcccggca tccgaga 17 <210> 5 <211> 27 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 5 ggtataggag ctagagatat cgtcctg 27 <210> 6 <211> 21

<212> DNA

ISPH-0590US.P1	-7-	PATENT
<213> Artificial Sequence		
<220>		
<223> PCR Probe		
<400> 6		
ccaagatgcc ggcccacttg c		21
<210> 7		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 7		
gaaggtgaag gtcggagtc		19
<210> 8		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 8		
gaagatggtg atgggatttc		20
<210> 9		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Probe		
<400> 9		

ISPH-0590US.P1	-8-	PATENT
caagetteee gtteteagee		20
<210> 10		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 10		
gtccggtatt tcctcagccc		20
<210> 11		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide	,	
<400> 11		
ccgcggtgcg tggaggtccc		20
<210> 12		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 12		
tacgcgctga gccgcggcgc		20
<210> 13		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

ISPH-0590US.P1	-9-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 13		
gcggtttcga agcccgccgg		20
<210> 14		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 14		
cctccattct gcaggaccct		20
<210> 15		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 15		
tcccaagtgt agcagagaca		20
<210> 16		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 16		
ctcctgctgt tatgcccagg		20

-10-

PATENT

ISPH-0590US.P1

ISPH-0590US.P1	-11-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 20		
gttcaccagc caggtggcat		20
<210> 21		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 21		
tgtggaagec eteacceaea		20
tgtggaaget tttacttac		20
<210> 22		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 22		
agttgatgtg ccagcggtac		20
<210> 23		
<211> 20		
<211> 20 <212> DNA		
<213> Artificial Sequence		
(213) Artificial bequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 23		
ggaccccaaa ctcagccact		20

ISPH-0590US.P1	-12-	PATENT
<210> 24		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 24		
tgcctgggag gcaataaggg		20
<210> 25		
<211> 25		
<211> 20 <212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 25		
atacatgcta actetetece		20
<210> 26		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
(22) Antibense Origonational		
<400> 26		
aagtcctcat taggtaggca		20
<210> 27		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-13-	PATENT
<223> Antisense Oligonucleotide		
<400> 27		
tgtaatgagc agctcatgga		20
<210> 28		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 28		
tcagtaacct tctcaagccc		20
<210> 29		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 29		
ggagetgeet ggacageaag		20
<210> 30		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 30		
tcagtgaccc tgagcattct		20
<210> 31		

ISPH-0590US.P1	-14-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 31		
tggctggccc actggctcaa		20
<210> 32		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
000		
<220>		
<223> Antisense Oligonucleotide		
<400> 32		
gcatgccetc tggttctgac		20
geacgeocce aggeoccgae		20
<210> 33		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 33		
gctttgcagt tcaccctgac		20
<210> 34		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-15-	PATENT
<400> 34		
gtggtatctc aaatcccagg		20
<210> 35		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 35		
tagtccaggc taacccctgt		20
<210> 36		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 36		
gtgatcttcc cttagatcct		20
<210> 37		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 37		
ctcagcagac acactcccac		20
<210> 38		
<211> 20		

ISPH-0590US.P1	-16-	PATEN
<212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 38 gctaagttgt cagcacaccc		20
<210> 39 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 39 aagtttccag aatgaagccc		20
<210> 40 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 40 agagaataca cccaagatac		20
<210> 41 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		

PATENT

ISPH-0590US.P1	-17-	PATENT
<400> 41		
tagttaagtg acttgcccag		20
<210> 42		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
-		
<400> 42		
gccctttgag gtaggtcagt		20
<210> 43		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 43		
ccatatagac taatgacagc		20
<210> 44		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
400 44		
<400> 44		20
ctgtatgttt ccgtggcaat		20
<210> 45		
<211> 20		
<212> DNA		

ISPH-0590US.P1	-18-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 45		
cttgcacgct agctggttgt		20
<210> 46		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 46		
gcatcgtctc caacttatct		20
<210> 47		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
22237 Ancisense Oligonacieotiae		
<400> 47		
taaggatgat gtttctccag		20
<210> 48		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 48		

ISPH-0590US.P1	-19-	PATEN
cccaaageca ggtgtagaac		20
<210> 49		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 49		
tgtaagagcg gtggctccac		20
<210> 50		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 50		
cattetggaa tgccattgtg		20
<210> 51		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 51		
ttatgaggat cagcatgtgt		20
<210> 52		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

-20-

PATENT

ISPH-0590US.P1

-21-

PATENT

ISPH-0590US.P1

<211> 20 <212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-22-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 59		
gcaaagactg accagctgct		20
<210> 60		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 60		
gactacccag aagattctgt		20
<210> 61		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 61		
cttccctcat ccttacattc		20
<210> 62		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 62		
cccgagccag gagagaaagg		20

ISPH-0590US.P1	-23-	PATENT
<210> 63		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 63		
cttccccagc agagaccact		20
<210> 64		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 64		
ccaatateet gaagatggea		20
<210> 65		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 65		
cccaactaat tcctcctctc		20
<210> 66		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

. .

ISPH-0590US.P1	-24-	PATENT
<223> Antisense Oligonucleotide		
<400> 66		
tatagatect gteecteage		20
<210> 67		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 67		
ctcccaataa ctcactcagt		20
<210> 68		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 68		
aagagattcc taaccctgcc		20
<210> 69		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 69		
cacacaaagg aggctgcctg		20
<210> 70		

ISPH-0590US.P1	-25-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 70		
aagtggcage tagetetaet		20
<210> 71		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide)	
<400> 71		
cacceteace aagtaageag		20
cacceteace aageaageag		20
<210> 72		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide	:	
<400> 72		
tgcttcttcc cagtgagaac		20
<210> 73		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide	<u> </u>	

.

ISPH-0590US.P1	-26-	PATENT
<400> 73		
atcaagcagg catctgatga		20
<210> 74		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 74		
ccctcagcct gaggtgccat		20
<210> 75		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 75		
ataatcetee acteaggeee		20
.210. 76		
<210> 76		
<211> 20 <212> DNA		
<213> Artificial Sequence		
(21) Altificial bequence		
<220>		
<223> Antisense Oligonucleotide		
-		
<400> 76		
cacttaagaa aagcagccct		20
<210> 77		
<211> 20		

ISPH-0590US.P1	-27-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 77		
cagcaagtca gtggcacagt		20
<210> 78		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 78		
ggctagttat ccaccgcttc		20
<210> 79		
<211> 20 <212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 79		0.0
cccaatcaca gaaaaggcat		20
<210> 80		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

<400> 80

aactactata tcccacataa

20

<210> 81

<211> 18508

<212> DNA

<213> H. sapiens

<400> 81

gagatgttag tggtgggcgc cccccgaggg ttcaccactg tttcctgaga aacttcccca 60 gtgcccaccc acccgttctc cgtgtgcccg agggccggtc ctgggctagg ctccgcgccc 120 cagececaaa eegggteece ageceettee agagagaaag eteeegaege gggatgeegg 180 gcagaggccc agcggcgggt ggaagagaag ctgagaagga gaaacagagg ggaggggag 240 cgaggagctg gcggcagagg gaacagcaga ttgcgccgag ccaatggcaa cggcaggacg 300 aggtggcacc aaattccctt cggccaatga cgagccggag tttacagaag cctcattagc 360 atttccccag aggcagggc agggcagag gccgggtggt gtggtgtcgg tgtcggcagc 420 atccccqqcq ccctqctqcq qtcqccgcga gcctcggcct ctgtctcctc cccctcccgc 480 cettacetee aegegggace geeegegeea gteaacteet egeactitge eeetgetigg 540 cagcggataa aagggggctg aggaaatacc ggacacggtc acccgttgcc agctctagcc 600 tttaaattcc cggctcgggg acctccacgc accgcggcta gcgccgacaa ccagctagcg 660 tgcaaggege egeggeteag egegtacegg egggettega aacegeagte eteeggegae 720 cccgaactcc gctccggagc ctcagccccc tggaaagtga tcccggcatc cgagagccaa 780 gatgeeggee eacttgetge aggaegatgt gagttteeea geetggeece gtaeegeegg 840 gtcgcaggcg cgggctgggc ttccagggga cgggttggtg gcagaagaga ggggagagct 900 ccgcggagga cttggtcatc tttttcgagt tgtgctgcct tccgtgagtt gggaatgtgg 960 attgtaattt ggggacttga gtctccaact ttagtttctt aagctttaaa gaaaaatccg 1020 gtcgtgctgg tgcttttatg aattatgcgg gttttccttt gtcttcgtgg ggatgtgagt 1080 getttaette teetteetae tgeegeetee egataggttt egegeeeete gteeeeeteg 1140 ccctccgccc ctaatgtatc tgtacagttt cagggaactt ttctccgttg cgtctcggat 1200 acaccetace etcagtgaac taeggegetg eggaagggte egtactgtee accetteece 1260 cagegtgatt agagagegga gtggccccag ctgcctccac gtgtctcttc tcctgactct 1320 cctcttcctc ccccttccag atctctagct cctataccac caccaccacc attacagcgc 1380 ctccctccag ggtcctgcag aatggaggag ataagttgga gacgatgccc ctctacttgg 1440 aagacgacat tcgccctgat ataaaagatg atatatatga ccccacctac aaggataagg 1500 aaggcccaag ccccaaggtt gaatatgtct ggagaaacat catccttatg tctctgctac 1560 acttgggage cetgtatggg ateaetttga tteetacetg caagttetae acetggettt 1620 ggggtaagca gcctccctgt cctcctgacc tagtcctcca ggtactcact gctcttttaa 1680 taaggtagga tettacagag gacaccagee ceteccagee teeeggttgg ggtttttete 1740 aggeatttet etttggttge tteaggeeta gtgggetggg aagaacetgg gggtaetgag 1800

 P_{ATENT}

atgcaggact gtcaatgctg ggggttgaga gctttggaac cttgtgcttg tgggctttga 1860 atgcaggact
agtgtgctgt
gcaggaggt
gagggttgaga
gctttggaac
cttgtgcttg tggggctttga 1860

agtgtacattgcc
tgaaaagagct
tttctgtttg
agtcatttgc
1920 agtgtgctgt

ttggctgcct
gtcccaccc
tgaaagagct
tttctgtttg
agtcatttgc
1920

aranaaan
naranaan
nar gcacaaggga aactactcag ggagagagtt tattggaaag ggaggagaga gctcattgga gaactactatttt ggaaag ggaggagaga gctcattgga 2100

caagcttct tcottacaca aaactatttt ggacacg gctcattgga 2100

aagaagaagagagagaga gctcattgga 2100 ccagactict togttacaga ggaagatgaa gctcccaca aaactatttt gacctgaccc cttggccaga 2160

mrtantonton ontrantonarata ontonarata ontonarata ontonarata ontonarata ontonarata ontonarata aaacaggtgt 2220 gtgttgctct tcgttacaga ggaagatgaa gctcccgtgc aacccaaggtc acacaaggtgt 2220

Analtaaar Nammerman aratmerma toperman construction of the construction agaatgaaat caggctgaag atatocagggt gotgoacata coagtoaaca aaatgoctott 2280

Connoctant natornatoa antornatoa artotoanaco thronanon thronanon thronanon thronanon thronanon thronanon agarontacoc 2340 agaatgaaat caggotgaag atatgtttca tgttccatcc cccgtccago ctgottcagg 2340

atcottott occadoaca agtocaaga attotgaaca conadaaaa accadaaca agtocaaga 2340 atccctcctt
ctgtaatgag
ggagacagtt
cccagtttgt
ccccgacctg
cccttagctc
agctctttca
2520 gcaggctttt ggtgtggcct gatggcatgg ccctgcccc tggatacaca catgcgcttt 2580

araarcraa araaaccaa agggaaggc agggagcttt 2640 gcagatccag gggccctgt cactatgagc ctaagttggg aagggaaagc agggagctct 2640

ronnaaanr ronrrrraa aanraartar araaaaaaan ronraaaaaaaa aaraaaaaaa 2760 gcagatccag gggccctgca ctgctactct ctaaggggtg gtgagccagg acttctggtg 2700

artrtaant artronctca agarcactettaa gggtagttat gcagaagggc tggtaggca 2760 agttttagct gtttccctca ggacctctta ggaggaggttat ggagaagggc tggtaggcca 2760

agttttagct gtttccctca ggacctctta ggtctctga agatggtgag atctggtca 2820 agttttaggt gtttccctca ggacctctta ggtcttctga agatggtgag atctggttca 2820

crtrtatraag gattccagaa atcctccagg tgctacagtg aaatgcaact gagaagagcc 2880

cractatag gagaagagcc 2880 Cctttgtcag gatctcagtt tttctaggta cacctgtg gcaacagtac ttttttagga 2940

Acatacaga agaacagac agaacaggac 2940

Acatacaga agaacagac agaacaggac 3000 agggaaggt agcattcctt gggttacata tgtgtacacag ccgcagagac agaacaggcc 3000

acatriotic transcord ctaaagatra agragatra agaacaggcc 3000

ctaaagatra agcattcctt gcatacaag ccgcagagac agaacaggcc 3000

ctaaagatra agaacaggcc 3000 aggtgcagat cagttcatct gcataccagg aagaggctctt gtatttgtga ggggagggcg 3060

nannanna tannathon nannanhot othoranot otho ggagcaggga totagcccct ctgaggatcc agcagaactt cagttgcagc tgagggatga 3120

anamatant ortroanant antitrort ortonaant ortroance tcageggatga 3120 agaggatagt tagcattccc caggcagtct gtggatgcct ctctccaccc tttctcccca 3180

ctatagattt cot acaagt agttttctt cotgcaagct ctctccaccc tttctcccca 3180

agaggatagt cottcacagc agtttctct cotgcaagct ctcagcaccc 3240 ctgtaggttt cttcacaagt agttttctct cctgcaagct ccttccagcc tcagcacccc 3240

ctgtaggttt cttcacaagt agttttctct cctgcaagct ccttccagcc tcagcacccc 3240

carrantaria rorantaria arantaria arantaria carcagtt 3300 gtgacctgcc catgggtgg tgctgtgccc ttggggcagat aaatgtggct cacagaagact 3420

cca,tat,ca,ca,a,a, ctcct,ctat, ttaaaaaaaacaa,aaaa aatgaccatg 3420

agatggtaac ttattttact gggcccc ttggggcagat aaatgtggct cacagaagact 3420

ctcctctat, ttaaaaaaaacaaaaa aatgaccatg 3420 agatggtaac ttattttact gggccctttg gtggatggct tagctgaaag aatgaccatg 3480

ctcqacttagaa ctcctctgtc ttgagaaaca aggagggtga ggggaggagg 3540 gtcagaggtc tcaacttgga catcttctct tcccaccttc agaatttagg agcttcacct Jour agaactttagagatt tccagcatt agaacttaggatttagagaac tggtcgtgat tccagcatt 3660 cttatgactg agcacttttg gacaatgtta aattagcaac tggtcgtgat tccagcattt 3660

cccttaagaa gaatocctca gacaatgtta attagcaac tggtcgtgat tccagcattt 3660

acccttaagaa gaatocctca accaaagaa 3720 gggaggaga cagagcaatg agatgttgct taaccatcaa tctggacatt ttcctcccct 3840

acatatttct. Acatataa atctccaact gatttaagcc cttctatttg ataggcttag 3900

acatatttaagcc cttctatttg ataggcttag 3900 aggraggaga gaaggaataa atctccaact gatttaagcc cttctatttg ataggcttag 3900

agarcaacac tgagtcttt ccccaatttc ccccaatttc ccccaatttc cctggttaata 3960 aggtgtttet
taggatetta agaaaaggea ceagagtgee tgagttette ceceaattte cectgttaata 3960

rtagaaann totagatet geeetaggg tettgeagea aataacaace 4020

roomagaaan totagateta cectgttaata 3960 taggagetetta tataegitet gagicaacae tgeeetaggg tettgeagea aataacaaee queo tetggeetaa etgatggitet etgaagaa etgaegate tetggeetaa etgatggitet etgaagataa etgatggitet eegagaaa etgaegataa etgatggitet eegagataag queo tetggeetaa etgatggitet eegagataag queo etgaagaaa etgaegataa etgaeg atgcaggtag atactgtatc tagagagage tctggctcaa ctgatggttt cccgaggtaag quuu

gggcagatca 4140

cctggggcct	cagtccccac	tctgagggaa	tgtggagaga	gctcttgttg	gggctgactg	4200
gctctgtggc	tctcctggag	atcttatagg	aggaatagaa	gagaagaaag	gaggtagggt	4260
tggggggaaa	aggaggttgt	ttaggaaaca	gctatcaatg	gctgcaaaag	aacacaggac	4320
aatttgttac	aatgtgtggt	gtctccaact	gcaactaagt	tctgtggcca	ctgaggatct	4380
attgtttcta	gctgtttccc	taggaatgaa	acattgttaa	gagtttctat	caaggccaca	4440
gcttctgcct	gctagagcta	ctgaacagag	gaagatatgg	ggacgcccag	cagcccactt	4500
cccagttaga	gattatatct	ggcacctcct	gagcctgcag	gcctccagga	aggtgaggga	4560
agacaatggt	ggggtgcttc	actgacagct	tgaagaatat	cccaccattg	tctagagagc	4620
gttgcccggt	gagagtatgg	gctgacaggg	atgtggcaaa	ggcgagacag	aggagttgtg	4680
catgtatctt	gggggaggtg	gatggtatag	ctggaacgtg	aaatctttgg	taaagcttaa	4740
gacactgtac	aaattggatt	tatgcacagg	gctaatttt	ccctgatttg	gccacactga	4800
ctgcttgaat	atttaaatgc	ttttttgtac	cagttgataa	atggccatag	tctgaatgcc	4860
ctaagagtcc	cctacaacta	agggcttctc	aaattggtca	gtgcccagat	tgtactggct	4920
gttattttat	tttttgagat	aaggtcttgc	tgtgttgata	aggcttgagt	gcagtggcgc	4980
gatcttggct	caccgcagcc	tcgacctcct	gagctcaaga	gatcctccca	cctcaacctc	5040
ttgagtagct	gagaccacag	gcaggtgcca	ccatgccaag	ctaattttta	aaattatctg	5100
tagaggcaag	gtctccctat	gttatcccag	ctggtcttga	actcctgggc	tcaaggggat	5160
cttcctgcct	tggcctccca	aaatgctggg	atgacaaagt	ggttcatact	acacctggcc	5220
ctctgctgtt	attttaataa	caccctggct	tatgggttct	gagctctgca	ggagtagttt	5280
gtggccctta	aaaccttaga	gaaggcctag	atagaggtga	aaggagatag	ctaggccctg	5340
ggagaatgcc	tttaagatga	agaatgagtg	gtaagagcac	tattctctct	cctgcctttc	5400
tgactcctta	gttcctggga	ttctttagct	tatcttttt	tcctgggttg	agaggttggg	5460
gggtgatatt	tttcaagtgg	taaaatctaa	gggatgtggt	tatccctaga	gttcatggta	5520
aagccagttc	tcacccaaag	cctgacgaag	acagtttcta	gcatccagag	agtgtctctg	5580
gcatcctttc	ccagatggaa	ctcacactga	ttggtgactc	cccactgtc	ttctcctggc	5640
aggggtattc	tactattttg	tcagtgccct	gggcataaca	gcaggagctc	atcgtctgtg	5700
gagccaccgc	tcttacaaag	ctcggctgcc	cctacggctc	tttctgatca	ttgccaacac	5760
aatggcattc	caggtaagaa	gttgtctctg	ctcagctgtt	tgtcctccac	actattaatg	5820
atccggggac	agaaaggagg	gatcagcacc	agagaggagc	cacacctgac	agccatttca	5880
ctttcctctc	tcctgtagtc	acctcaagtt	ccagttcagt	ccttaagtcc	ataaagcatg	5940
aagagacttc	tgagtcttgg	aaaagggaac	tggaagataa	ttggaaaata	ctcctgatgt	6000
gtaggaatat	ttttgatcct	aaggtccctg	tgttgtcaca	caatctggcc	gttgtggctc	6060
ttcatcataa	ggggctttgg	cacataagcc	agagactgac	cttagattcc	tgggcagaca	6120
ctggacaata	aattcactat	ttaaggtaaa	tatcttaggg	aggcagagct	gggaggatca	6180
ctggagccca	ggagtttgaa	gctgcagtga	gccatgatat	caccactgca	ctccagcctg	6240
ggtgacaaga	ccccaacttt	aaaaaaaaa	tttcaaaagt	gaataactta	ggactccacc	6300
acagtgggat	tgaagttgat	gttcccagac	tcgtgaactc	ttattttgag	ataatgagag	6360
caaacacttt	tattgcactg	actatgagcc	tggcactatt	ctaagcattt	gatataaagt	6420
cctcacaaaa	atcttaggaa	ataggtacta	ttatccccat	tttacagatg	aggaaaccaa	6480

			-			
gttacagaga	gattagatag	accagcccaa	cattgtggcc	ctttcttggg	ctgccatggt	6540
ggctaagtaa	aacattgagg	tttgttaagg	caaaaaacaa	acctgggcac	ggtggctcac	6600
gcctgtaatc	tcagaacttt	gggaggccga	ggtgggcaga	tcacaaggtc	aggagatcaa	6660
gatcatcctg	gctaacacag	tgaaactctg	tctctactaa	aaatacaaaa	aattagccag	6720
gcgtggtggc	gggcacctgt	agtcccagct	acgtgggagg	ctgaggcagg	agaatggtgt	6780
gaacctggga	ggcagagctt	gcagtgagct	gagatcgcgc	cactgcactc	cagcctgggc	6840
aacagcaaga	ctccatctca	aaaaaaaaa	aaaaaagtt	tatagcaaag	acagaatgaa	6900
gggaaatggg	gaaagggaat	gcatcatagt	cattaagctg	tagcaatggg	caaatgatag	6960
catgtggcgt	ttggcttagc	ttggagcaag	aggaagaaag	gaaaccaact	tagtggtggc	7020
aatatcccaa	gaacttgcca	catttgcatg	atcatctctg	ccatagcagc	ttataccttg	7080
aaggcttcca	aagttgtcct	gtggagcaaa	aggaaggaag	agagatattg	gtacattctt	7140
taagggatgg	aaaaagtcat	gaagaagccc	agaggtcgtt	tgaaaatgca	gtcatgatca	7200
cgagttgcat	gcctggcctt	gttattgggt	tgtatgagct	cttttgcaag	gcaccagaat	7260
ggtgcaccct	gcagctgcag	cttatctact	gattgagacc	ctaggacaca	aggctgcctg	7320
cctcatgttc	cccatgccta	gggattaggt	accccatgag	gatcttttcc	aacattcctt	7380
gcttaaagaa	ttgcaatgtt	ctcacttctt	gaaactctct	gagctctgta	tgatttacct	7440
ccgttccacc	caccatataa	ctttcaagaa	acagcagttc	tattgctatg	gtcctgggac	7500
tttaagttgc	ttttttctac	ttaagcttca	gtggcaagtt	gggagaagaa	gggaggcaac	7560
tccatgactc	ctttggagcc	cagattcctg	ggtattttgt	gaggttgggc	tgagcgcctt	7620
gggctcttga	tacctgtcca	ttgggattct	cctaataggg	tgtctatcct	caagccttac	7680
attcctcttc	tctctctccc	cagaatgatg	tctatgaatg	ggctcgtgac	caccgtgccc	7740
accacaagtt	ttcagaaaca	catgctgatc	ctcataattc	ccgacgtggc	tttttcttct	7800
ctcacgtggg	ttggctgctt	gtgcgcaaac	acccagctgt	caaagagaag	gggagtacgc	7860
tagacttgtc	tgacctagaa	gctgagaaac	tggtgatgtt	ccagaggagg	tgagtgaagc	7920
cctgatggag	gtggggatat	ggccctggca	cctggtcatt	agggacccca	ttttttctcc	7980
tgagactttc	aaaatataag	ctgagaaatt	tgctgggttt	gcatgttcac	aatcttaatt	8040
taaaatccca	atttttaaca	teccaeggge	ccgtagccat	agactattgc	tccatttctt	8100
tctctctgac	tatcttaatt	aaacccatta	cattcaagag	atgtttattg	tcctaggaca	8160
gtcatagatt	caaagatgat	tatagcctag	ttgcctaggt	ttgtttgttt	gtttttgtgt	8220
ttgtgtttca	acagtctttc	tctcttgccc	aggctggagt	gcagtggcac	aatcatggct	8280
cactgcagcc	ttgacttccc	aggctcaagc	aatccttcta	cctcaacctc	ctgagtatct	8340
gggactacag	gcacacaccg	ccatgcctgg	ctaattttt	gtggggacaa	ggtctcactc	8400
actatattgc	ccaggccggt	agcttagttc	ttaccttcaa	aaagtttgta	gcctatcggg	8460
gtggagagat	aagccaagta	tccagataac	catggcataa	ggcagaatat	tttctgtact	8520
atgagaggta	caaaggggag	ggagattgct	caatgggcaa	caccaaggaa	gtgatatgaa	8580
ataaatagtg	ttggaatcca	ccaacggata	gaaattttta	caactatgtg	tggggagaga	8640
cagtgcaaac	agaagaaaca	gaatgagcta	aaacacgaag	catgttccag	caatagagtc	8700
cttttgcttg	aagtataggg	tatgggaaga	agtaagactg	gagagactaa	tgccattctt	8760
gtcgagtcct	aaaagcagac	ttaggactta	attcaataag	caataggaag	ccattacatc	8820

PATENT

ttttgaactg caatgtggca tagttacgga cgtgctttag gaaggctgct tttagaacaa 8880 gtgtaagaaa caatgtggca tagttacgga cgtgctttag gaaggctgct tttagaacaa 8880
cractagagca aaagtgagag gtagggaat aagttaggta atgaggaaca 8940 gtgtaagaaa ccactgaggc aaagtgagag gtagggacat aagttaggta atgaggaccc 8940

ctgctagcga agcagtggca gaaatggagag gtagggacat aagttaggta atgaggaccc 8940

aaaacttoac toctoaaaoaa atgaaggttgg gtgcagggaa tgtcagtgat 9000 Ctgctagcga agcagtggca gaaatggaga aaagagttgg gtgcagggaa tgtcagtgat 9000

Arachtaaa Ashaaaant aagaagtgg gtgcagggaa tcagtgcct tggaatgtca 9060

Arachtaaa aagaagtag gtgcagggaa tcagtgcct tggaatgtca 9060 gtadaagtca aagacttgac tgctgaagga atgtagggaa tcagtgccct tggaatgtca yubu aanaaaaaaa aagacttgac tgctgaagga tgaagaggc ttcctgaagga acagagagct yubu aanaaaaaaa aagacta aagac gtagctagca aaggacactc aatgggtctc tgagggaaaa gaagaccaaa gaattaggga 9180

gtagctagca gaaaatggag gcatgacact aaacacagac tgaaaaagag tgctgattag 9240

aaaaaaaagag tgctgattag 9240 gtagctagca gaaaatggag gcatgacact aaacacagac tgaaaaagag tgctgattag gcagatag gaacacagac tgaaaaagag tgctgattag gcagatag gaacacagac tgaaaaagag tgctgattag gcagatag gaacacagac traccagaca aggatggaga gacgtctgtt gcagatag gcagata aaagagaaag gagccaaag gcagatggga aaaccagcca aggatggaga gacgtctgtt 9300

arrannar anrannar accordate ttaccaatgt ggtattatge tctagtaaaa 9360

aaaagagaaag gacgccaaag gcagatggga aaaccagcca aggatggaga gacgtctgtt 9300 agtcagcgat ggccgggcat ggtggctcat gccgtaatc ccagcacttt gggaggctga gtcagcactat ccagcacttt gggaggctga g420

Annual of the content ggcgggagga ttgctggaaa gttcaggcat tcgagaccag cctgggcaac atagtgagac 9480

ctcatctcta caaaaaatta aaaactaaat gggcaccag cctgggcaac atagtgagac 9480

ctcatctcta caaaaaatta aaaactaaat gggcaccag cctgggcaac atagtgagac 9480

ctcatctcta caaaaaatta aaaactaaat tcgagaccag cctgggcaac atagtgagac 9480

ctcatctcta caaaaaatta aaaactaaat tcgagaccag cctgggcaac atagtgagac 9480

ctcatctcta caaaaaatta aaaactaaat tcgagaccag cctgggcaac atagtgagac 9480 ctcatctcta caaaaaatta aaaactaaat gggcacgatg gttcatgcct gtggtcccag 9540

ctactcagga ggctggggtg ggaggatctc ttggcccagg agttcatggcct gtgggtcccag 9540

ccactacact ccaaccttaa aaaactaaat gggcacgatg gttcatgcct gtggtcccag 9540

ccactacact ccaaccttaa caacctaaat gggcacgatg gttcatgcct gtgggtcccag 9540 taaggtcacy ccactgcact acadagagty agaccotygte aaaaaaaaaaca geed contrain nontronaat tantoronaa oatronara tantoronaa oatronara tantoronaa oatronara oatronara tantoronaa oatronara acagcccatc

tgacctggtg tctggtctgat tagtgtggaa gatccatgta ggtgtggagt ccccctccat g780

caatgtaggt actacaaacc tggcttgctg atgatgtgct g780

acaggagt ccccctccat g780

caatgtaggt actacaaacc tggcttgctg atgatgtgct g840

acaggagt ccccctccat g780 tcatcctggcg tctggtctgt caatgtaggt actacaaacc tggcttgctg atgatgstgct 9840

tcatcactggcg cacgcttgtg caatgtaggt actacaaacc tggcttgctg atgatgstgct 9840

tcattaccac tttcttacca tatacctataca tacctataca aacagtgtgt 9900 tcatcctgcc cacgettgtg coctggtatt tctggggtga aacttttcaa aacagtggtgt gootaarar cotcottata archivetata archivetata archivetata archivetata archivetatata archivetatata archivetatata archivetatata archivetatata archivetatatatatata cacctggctg gtgaacagtg 9900

**Tormon of the control of the contro tggtttcact cttcggatat cgtccttatg acaagaacat tagcccccgg gagaatatcc 10020

actaattaaa acaagaacat tagcccccgg gagaatatcc 10020

aaattaaact aaaacaagaacat cagcccccgg gagaatatcc 10020

aaaacaagaacaag aagactacat ccagtggtct 10080 gctgattagg ggattaggct ggaggctgtg ggtaagtcag ctgtccaagt aagactacat ccagtggtct 10080

**Transara agaggcaga aaaactagat aaaactagtt tttatggcta 10140

**Transara aaaactagat aaaactagtt tttatggcta 10140 gctgattagg ggattaggct aggagccaga adaactagat adatctgttt tttatggcta lulau aranananan aranantri aranananan aranan ara agagtcaggc aacatgttttcc actataaaat taggggggcag tatactggaa aacgcttttg 10200

actatataaaat gaaaggataa gaaacaaaac acaaaaaaaac 10260

actataggc aacatgtttt to actataaaat taggggggcag tatactggaa aacgcttttg 10200

actataaaaaa gaaaggataa gaaacaaaac acaaaaaaaac 10260 cggctcatgc ctgtaatccc aggat ctaaaacaat ttccaaatgc catgtatgct ccgggcccgg 10320

annanrtra arraarna raaaarna traaaarna trtrraaraa aaaacaag ccgggcaggtc acctgaggtc 10380 aggagttga gaccagtctg gaggctgagg cgggcaggtc acctgaggtc 10380

and and and an analysis of the control of the cont aggagtttga gaccagtctg gccaacacgg tgaaaccctg tttctattaa aaagcaaaac luqau

**Trancagar trancagar acatgatgag caccttagag tttccatta aaagcaaaac luqau

**Trancagar aaaagcaaaac tacatgatgag caccttagag ttttcctttc 10500 tttcatcaac aaaagaaaac caaatgccat acatgatgag caccttagag ttttcctttc 10500

aaraaan ran ranaaraa 10560 aatgggatca tctgggctgg actgcagtct tgcttgaggc aaggaatgca taaatagaac 10560

**Anrhittica chitache arationers arationers of the same araticles of the same arationers of the same arationers of the same araticles of the same are araticles of the same are araticles of the same araticles of the same araticles of the same are araticles of the same are araticles of the s ccacctacce tettgetete tattgaaggge atcaaaataa etgetggtgg ccetttacta 10740

nanaana noon aanaann noon aanaann noon nanaann noon aanaann noon nanaann na Ctaggaacat ccttgtctcc tcttgtcctc

Ctaggaacat cccttccccc tcttgtcctc

Caggaatctc ccaataaagc agtgtgatca 10860

Cacctaccc tcttgtctc

Ctaggaacat cccttccccc

Cottccccc tcttgtcctc

Caggaatctc ccaataaagc agtgtgatca 10860

Cottccatt ctattctggg 10800 caagtcoctg occate cocct caggaatote caataaage agtgtgatca 10860

**Trefficity occate caataatote caaggaatote caataaage agtgtgatca 10860

**Trefficity trefficity treffic caggctggtc tctttcttt tcctttcttt tctaatgaga cagggtctca ccatggtgcc 10980

aratrirtr ototocott cottcttt tctaatgaga cagggtctca ccatggtgcc 10980

rootocagcttc tctaatgaga cagggtctca ccatggtgcc 10980 acatttttt ttgaaccctg ggctgaagtg atcctcctgc ctcagcctcc caaagtatct 11040

astronomy for totage at a constant and astronomy for the constant as a formation and astronomy for the constant as a formation as aattttcctt aaatagatct ggcgacctct tcttccagt aattggtgct attggtcatt 11160

caataatatc	tagacaacca	cactactcca	cacatttagg	caggtcattg	cctaacactc	11220
attttcttt	tctctttaaa	aatcttcctt	tatattctca	accttaacca	tctttattat	11280
cttttaaatt	gttgttgaga	cagtctcact	ctgttgccca	ggtttcagtg	cagtggtgtg	11340
atcacagctc	actgcagcta	tgacctcctg	ggctcaagcg	atcctcgggg	ttcagcctcc	11400
caagtaactg	ggattacagg	tgcatgccac	catgcttggc	taattttct	attttttgt	11460
agagacatgg	ttttgccatg	ttgcacaggc	tggtctcgaa	ctcctgagct	caagtgatct	11520
tcctgccttg	gcctcccaaa	gtgctggaat	tataatagcc	gtgagccact	gcgcctggcc	11580
tactatgttt	attaaaagga	tttattgcct	gtaatcccag	cactttggga	ggccgaggcg	11640
ggtggatcat	gaggtcagga	gatcgagacc	atcctggcta	acaaggtgaa	accccgtctc	11700
tactaaaaat	acaaaaaaat	tagccaggcg	cagtggcggg	cgcctgtagt	cccagctact	11760
tgggaggctg	aggcaggaga	atggcgtgaa	cccgggaagc	ggagcttgca	gtgagccgag	11820
attccgccac	tgcagtccgc	agtccggcct	gggcgacaga	gcgagactcc	gtctcaaaaa	11880
aaaaaaaaa	aaaagattta	tttgtctagg	cgtggtggct	cacacctgta	atcccagcac	11940
tttgggaagc	caaagtgggt	ggttcacttg	aggtcaggag	ttagagatca	gccaggccaa	12000
tatggtgaac	ctctgtctct	acttaaaaaa	aaaaaaaaa	aaaagtacaa	aaaacttagc	12060
caggcatggt	ggcacgtgcc	tgtagtccca	gctactcagg	aggctgaggc	agaagaatcg	12120
cttgaacccg	ggaggcagag	gttgcaatga	gccgagattg	tgccactgca	ctccagcctg	12180
ggtgacagag	actccatctc	aaaaatatat	aataaaaata	aaagcatttt	ttttctctct	12240
ttttaacttt	cacatatctc	ttttcaggca	ccttcttacc	attgtgccta	ttcttacttt	12300
aacccatgat	taaaataaat	catatacact	gtataaatct	gagattatca	taggaatgga	12360
gtttctggca	tgagatgttt	cctgtatcgc	aaatggatct	ataatgacct	tccccacctc	12420
cagcctctgg	gtggccatga	gttcaaagtg	gctgccaata	tctgacctgt	tgttgttatc	12480
attcactcct	ccttgcctgc	tgctttcctc	ccttatcacc	tcaccctttg	ttctcctcca	12540
gctctgtttc	ctgccaccct	aatctttttg	tttcttgaat	tacctccccc	actgtcacat	12600
gctcatcttc	tctgccaaat	taaccttctc	ccttgagcct	ttcttgggct	gtctcttgct	12660
gccccagttg	caaagtcctg	tcttcttct	acccgttgac	cctcttcttt	tttttcctc	12720
ccttgtctct	gtgtgcatct	gattccattt	taaatctggt	aaccaaaggc	ctggctagtg	12780
cttacacaca	gcccagctgc	aaaaccatta	atggacatta	ataatcctca	gtacctttat	12840
tcctggcatt	ctacccccct	cctccccagt	tcacactgca	gatcatcagg	tgtcacagag	12900
agaggacata	ccttgaaatg	ccctagatga	tgtcatttac	tttgcaggac	ttccttgcct	12960
tgcttctgat	taatgtcatg	actggtctgt	ctgagggtac	tgttatctac	aaagagccaa	13020
atattagctc	ttagtagcta	ttctttatcc	atgcctgatt	agggtcagta	ttatttttgg	13080
ctgtggttca	gaaagaagag	tcctgccaag	cgttggcaaa	ctctctatct	gtcgagtttc	13140
caaagcttta	cacgttagag	aaattgctgt	gaatccagaa	tttgtttgtt	ttcctccctc	13200
cagcaaagtg	aaatgttcat	cccaagagtc	ctcaaaatct	cagaggttac	agggtatttt	13260
tcttcctcag	agagettetg	ttttatcagc	acctccccca	caccagggtc	aaagctcaaa	13320
aaagttggag	cagcccctgg	gaactgcagt	ggctgaggac	attccagccc	ctgggctggc	13380
ctttcttctg	atctttggct	gcagggccca	ctcttttgga	acctcccacc	cctagaggtg	13440
gttccagtgt	ggtggggaaa	ggtgtgcttc	tttactcatt	tttttaagag	tcatagccag	13500

agtgcttcat tctgc	caagga cgtgcacat	g cacatgcaca	cagagccttg	agggcagggc	13560
caagagtgaa tttgg	gaattt tccaacctg	a tacccattcc	caaaagtagg	agcttctctc	13620
tagtcatttt atcct	tctgag aaactgtca	g ttctcctccc	acaaggctcc	cagacagcca	13680
cgggtgacca gggtc	ctccaa tcactcctt	a agatgccttt	gactggctgg	gcgcagtgac	13740
tcatgactgt aatco	ctagca ctttgggtg	g tcaacgtggg	agggttgctt	gcaacatggc	13800
aagaccccgt ctcta	acaaaa aaagtaaaa	t aataaaagta	aagatgcctc	tgaggggatc	13860
tgtttggttc atatt	taaaag agactgaat	t catccattca	acaatagcga	gtttctccca	13920
ggtgtgaggt accct	tgctag ctaactggt	g tgcacaaatc	aagaaaacct	caatgcaccg	13980
tcactccata actto	ctcgct tttgtttca	g gtgagggctt	ccacaactac	caccactcct	14040
ttccctatga ctact	tctgcc agtgagtac	c gctggcacat	caacttcacc	acattcttca	14100
ttgattgcat ggccg	gccctc ggtctggcc	t atgaccggaa	gaaagtctcc	aaggccgcca	14160
tcttggccag gatta	aaaaga accggagat	g gaaactacaa	gagtggctga	gtttggggtc	14220
cctcaggttc ctttt	ttcaaa aaccagcca	g gcagaggttt	taatgtctgt	ttattaacta	14280
ctgaataatg ctacc	caggat gctaaagat	g atgatgttaa	cccattccag	tacagtattc	14340
ttttaaaatt caaaa	agtatt gaaagccaa	c aactctgcct	ttatgatgct	aagctgatat	14400
tatttcttct cttat	teetet etetettet	a ggcccattgt	cctcctttc	actttattgc	14460
tatcgccctc ctttc	ccctta ttgcctccc	a ggcaagcagc	tggtcagtct	ttgctcagtg	14520
tccagcttcc aaago	cctaga caacctttc	t gtagcctaaa	acgaatggtc	tttgctccag	14580
ataactctct ttcct	ttgagc tgttgtgag	c tttgaagtag	gtggcttgag	ctagagataa	14640
aacagaatct tctgg	ggtagt cccctgttg	a ttatcttcag	cccaggcttt	tgctagatgg	14700
aatggaaaag caact	ttcatt tgacacaaa	g cttctaaagc	aggtaaattg	tcgggggaga	14760
gagttagcat gtate	gaatgt aaggatgag	g gaagcgaagc	aagaggaacc	tctcgccatg	14820
atcagacata cagct	tgccta cctaatgag	g acttcaagcc	ccaccacata	gcatgcttcc	14880
tttctctcct ggcto	cggggt aaaaagtgg	c tgcggtgttt	ggcaatgcta	attcaatgcc	14940
gcaacatata gttga	aggccg aggataaag	a aaagacattt	taagtttgta	gtaaaagtgg	15000
tctctgctgg ggaag	gggttt tettttett	t ttttctttaa	taacaaggag	atttcttagt	15060
tcatatatca agaag	gtcttg aagttgggt	g tttccagaat	tggtaaaaac	agcagctcat	15120
agaattttga gtatt	tccatg agctgctca	t tacagttctt	tcctctttct	gctctgccat	15180
cttcaggata ttggt	ttcttc ccctcatag	t aataagatgg	ctgtggcatt	tccaaacatc	15240
caaaaaaagg gaagg	gattta aggaggtga	a gtcgggtcaa	aaataaaata	tatatacata	15300
tatacattgc ttaga	aacgtt aaactatta	g agtatttccc	ttccaaagag	ggatgtttgg	15360
aaaaaactct gaagg	gagagg aggaattag	t tgggatgcca	atttcctctc	cactgctgga	15420
catgagatgg agagg	gctgag ggacaggat	c tataggcagc	ttctaagagc	gaacttcaca	15480
taggaaggga tctga	agaaca cgttgccag	g ggcttgagaa	ggttactgag	tgagttattg	15540
ggagtcttaa taaaa	ataaac tagatatta	g gtccattcat	taattagttc	cagtttctcc	15600
ttgaaatgag taaaa	aactag aaggcttct	c tccacagtgt	tgtgcccctt	cactcatttt	15660
tttttgagga gaagg	ggggtc tctgttaac	a tctagcctaa	agtatacaac	tgcctggggg	15720
gcagggttag gaato	ctcttc actaccctg	a ttcttgattc	ctggctctac	cctgtctgtc	15780
ccttttcttt gacca	agatct ttctcttcc	c tgaacgtttt	cttctttccc	tggacaggca	15840

gcctcctttg	tgtgtattca	gaggcagtga	tgacttgctg	tccaggcagc	tccctcctgc	15900
acacagaatg	ctcagggtca	ctgaaccact	gcttctcttt	tgaaagtaga	gctagctgcc	15960
actttcacgt	ggcctccgca	gtgtctccac	ctacacccct	gtgctcccct	gccacactga	16020
tggctcaaga	caaggctggc	aaaccctccc	agaaacatct	ctggcccaga	aagcctctct	16080
ctccctccct	ctctcatgag	gcacagccaa	gccaagcgct	catgttgagc	cagtgggcca	16140
gccacagagc	aaaagagggt	ttattttcag	teceetetet	ctgggtcaga	accagagggc	16200
atgctgaatg	cccctgctt	acttggtgag	ggtgccccgc	ctgagtcagt	gctctcagct	16260
ggcagtgcaa	tgcttgtaga	agtaggagga	aacagttctc	actgggaaga	agcaagggca	16320
agaacccaag	tgcctcacct	cgaaaggagg	ccctgttccc	tggagtcagg	gtgaactgca	16380
aagctttggc	tgagacctgg	gatttgagat	accacaaacc	ctgctgaaca	cagtgtctgt	16440
tcagcaaact	aaccagcatt	ccctacagcc	tagggcagac	aatagtatag	aagtctggaa	16500
aaaaacaaaa	acagaatttg	agaaccttgg	accactcctg	tccctgtagc	tcagtcatca	16560
aagcagaagt	ctggctttgc	tctattaaga	ttggaaatgt	acactaccaa	acactcagtc	16620
cactgttgag	ccccagtgct	ggaagggagg	aaggcctttc	ttctgtgtta	attgcgtaga	16680
ggctacaggg	gttagcctgg	actaaaggca	tccttgtctt	ttgagctatt	cacctcagta	16740
gaaaaggatc	taagggaaga	tcactgtagt	ttagttctgt	tgacctgtgc	acctacccct	16800
tggaaatgtc	tgctggtatt	tctaattcca	caggtcatca	gatgcctgct	tgataatata	16860
taaacaataa	aaacaacttt	cacttcttcc	tattgtaatc	gtgtgccatg	gatctgatct	16920
gtaccatgac	cctacataag	gctggatggc	acctcaggct	gagggcccca	atgtatgtgt	16980
ggctgtgggt	gtgggtggga	gtgtgtctgc	tgagtaagga	acacgatttt	caagattcta	17040
aagctcaatt	caagtgacac	attaatgata	aactcagatc	tgatcaagag	tccggatttc	17100
taacagtcct	tgctttgggg	ggtgtgctga	caacttagct	caggtgcctt	acatctttc	17160
taatcacagt	gttgcatatg	agcctgccct	cactccctct	gcagaatccc	tttgcacctg	17220
agaccctact	gaagtggctg	gtagaaaaag	gggcctgagt	ggaggattat	cagtatcacg	17280
atttgcagga	ttcccttctg	ggcttcattc	tggaaacttt	tgttagggct	gcttttctta	17340
agtgcccaca	tttgatggag	ggtggaaata	atttgaatgt	atttgattta	taagttttt	17400
tttttttt	gggttaaaag	atggttgtag	catttaaaat	ggaaaatttt	ctccttggtt	17460
tgctagtatc	ttgggtgtat	tctctgtaag	tgtagctcaa	ataggtcatc	atgaaaggtt	17520
aaaaaagcga	ggtggccatg	ttatgctggt	ggttaaggcc	agggcctctc	caaccactgt	17580
					ctcagttttc	
cttctgttaa	aatggggata	ataatactga	cctacctcaa	agggcagttt	tgaggcatga	17700
ctaatgcttt	ttagaaagca	ttttgggatc	cttcagcaca	ggaattctca	agacctgagt	17760
					cagatgctgt	
					ggtggataac	
tagccagaca	aaatttgaga	atacataaac	aacgcattgc	cacggaaaca	tacagaggat	17940
gccttttctg	tgattgggtg	ggatttttc	cctttttatg	tgggatatag	tagttacttg	18000
					attgtactaa	
tctgagattg	tgtttgttca	taataaaagt	gaagtgaatc	tgattgcact	gggtctggga	18120
gtttcttttg	gctgtgattc	aaagtcttgg	gatttgtctc	tggctcatat	ctatgtctgt	18180

acctttaaga gtataaaaga agtagaagtt acaatggttg actcataccc cattaacctg 18240 ccctgctgtc ctaaaggtaa ctttaggtta aactctggga cgcaggaagc caggagtctg 18300 ctgccattaa atcaaacaca ttaacaccag ctggcaactt ggccctgggg aagtgccagg 18360 gttctcgggt gtgtcacgtg gtcggtcaca tagacctaag ataaagacca tgggagagga 18420 aaagaccagc aggagaagcg ctccctggga aagcagttt ttgctcttgc ccaggctgga 18480 gtgcaatggt gtgatctggg ctcactgc 18508

<210> 82

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 82

gtgcgcgcga gcccgaaatc

20

<210> 83

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 83

ccgtgtccgg tatttcctca

20

<210> 84

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

ISPH-0590US.P1	-37-	PATENT
<400> 84		
ggcaacgggt gaccgtgtcc		20
<210> 85		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 85		
atttaaaggc tagagctggc		20
<210> 86		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 86		
cgagccggga atttaaaggc		20
<210> 87		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 87		
gaggeteegg ageggagtte		20
<210> 88		
<211> 20		
~212× DNA		

ISPH-0590US.P1	-38-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 88		
ttggctctcg gatgccggga		20
<210> 89		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><220> <223> Antisense Oligonucleotide</pre>		
(223) Ancibense Oligonaereoriae		
<400> 89		
gtgggccggc atcttggctc		20
<210> 90		
<211> 20		
<212> DNA <213> Artificial Sequence		
(213) interritoral bequesies		
<220>		
<223> Antisense Oligonucleotide		
<400> 90		
teetgeagea agtgggeegg		20
<210> 91		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
.400. 01		
<400> 91		

ISPH-0590US.P1	-39-	PATENT
agctagagat atcgtcctgc		20
<210> 92		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
(223) Ancischise Origonacicotrae		
<400> 92		
ccatacaggg ctcccaagtg		20
<210> 93		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
5		
<400> 93		
gtagaacttg caggtaggaa		20
<210> 94		
<211> 20 <212> DNA		
<213> Artificial Sequence		
Taros intornacional boques		
<220>		
<223> Antisense Oligonucleotide		
<400> 94		
gctgttatgc ccagggcact		20
<210> 95		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

-40-

ISPH-0590US.P1

PATENT

-41-

PATENT

ISPH-0590US.P1

<211> 20 <212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-42-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 102		
aaacctctgc ctggctggtt		20
<210> 103		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 103		
gtagcattat tcagtagtta		20
<210> 104		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>	•	
<223> Antisense Oligonucleotide		
(223) Antibense Origonacieotiae		
<400> 104		
tactggaatg ggttaacatc		20
<210> 105		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 105		
tcagcttagc atcataaagg		20

ISPH-0590US.P1	-43-	PATENT
<210> 106		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 106		
agactgacca gctgcttgcc		20
<210> 107		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 107		
gctggacact gagcaaagac		20
<210> 108		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 108		
tttggaaget ggacaetgag		20
<210> 109		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-44-	PATENT
<223> Antisense Oligonucleotide		
<400> 109		
tctggagcaa agaccattcg		20
<210> 110		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
1227 1220100 012301101000240		
<400> 110		
cttcaaagct cacaacagct		20
<210> 111		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 111		
ccacctactt caaagctcac		20
<210> 112		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
-		
<400> 112		
tcaagccacc tacttcaaag		20
<210> 113		

ISPH-0590US.P1	-45-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 113		
ctctagctca agccacctac		20
<210> 114		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 114		
tgtgtcaaat gaagttgctt		20
<210> 115		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 115		
cccgacaatt tacctgcttt		20
<210> 116		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-46-	PATENT
<400> 116		
ttacattcat acatgctaac		20
<210> 117		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 117		
tgtctgatca tggcgagagg		20
<210> 118		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 118		
aaggaagcat gctatgtggt		20
<210> 119		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 119		
ggagagaaag gaagcatgct		20
<210> 120		
<211> 20		

ISPH-0590US.P1	-47-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 120		
aactatatgt tgcggcattg		20
3 3 33		
<210> 121		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 121		
tagatgttaa cagagacccc		20
<210> 122		
<211> 20 <212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 122		20
aatcagggta gtgaagagat		20
<210> 123		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-	-0590US.P1	-48-	PATENT
<400>	123		
gggta	gagcc aggaatcaag		20
<210>	124		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Antisense Oligonucleotide		
<400>	124		
agcag	tggtt cagtgaccct		20
<210>	125		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Antisense Oligonucleotide		
<400>	125		
tactt	tcaaa agagaagcag		20
<210>	126		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Antisense Oligonucleotide		
<400>	126		
cgtga	aagtg gcagctagct		20
<210>	127		
<211>	20		
<212>	DNA		

ISPH-0590US.P1	-49-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 127		
ccttgtcttg agccatcagt		20
<210> 128		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 128		
ggtttgccag ccttgtcttg		20
<210> 129		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 129		
cactggctca acatgagcgc		20
<210> 130		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 130		

ISPH-0590US.P1	-50-	PATENT
tgctctgtgg ctggcccact		20
<210> 131		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 131		
aataaaccct cttttgctct		20
<210> 132		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 132		
gactgaaaat aaaccctctt		20
.010. 122		
<210> 133 <211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 133		
agagcactga ctcaggcggg		20
<210> 134		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

<220>		
<223>	Antisense Oligonucleotide	
<400>	134	
ttgca	etgee agetgagage	20
<210>	135	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Antisense Oligonucleotide	
<400>	135	
tactt	ctaca agcattgcac	20
<210>	136	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Antisense Oligonucleotide	
<400>	136	
actgt	ttcct cctacttcta	20
<210>	137	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Antisense Oligonucleotide	
<400>	137	
cttgc	cettg ettetteeca	20

-51-

PATENT

ISPH-0590US.P1

<210> 138	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 138	
	20
tttcgaggtg aggcacttgg	20
<210> 139	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 139	
tcagccaaag ctttgcagtt	20
coagecaaag coocgoagec	20
<210> 140	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 140	
ttetgetttg atgaetgage	20
<210> 141	
<211> 20	

<212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-53-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 141		
atcctcggcc tcaactatat		20
<210> 142		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 142		
tccttgttat taaagaaaaa		20
coccigitat caaagaaaaa		20
<210> 143		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 143		
ctaagaaatc tccttgttat		20
<210> 144		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><220> <223> Antisense Oligonucleotide</pre>		
223/ Aletselise Offgondereoctue		
<400> 144		
cttcttgata tatgaactaa		20

ISPH-0590US.P1	-54-	PATENT
<210> 145		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 145		
acttcaagac ttcttgatat		20
<210> 146		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 146		
aaattccatg agctgctgtt		20
<210> 147		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 147		
gaactgtaat gagcagctca		20
<210> 148		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-55-	PATENT
<223> Antisense Oligonucleotid	le	
<400> 148		
tgaagatggc agagcagaaa		20
<210> 149		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotic	le	
<400> 149		
tggaaatgcc acagccatct		20
<210> 150		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotic	le	
<400> 150		
cgacttcacc tccttaaatc		20
<210> 151		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotic	le	
<400> 151		
gcaatgtata tatgtatata		20
<210> 152		

ISPH-0590US.P1	-56 <i>-</i>	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleoti	.de	
<400> 152		
ccagcagtgg agaggaaatt		20
<210> 153		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleoti	.de	
<400> 153		
cagcetetee ateteatgte		20
<210> 154		
<211> 20 <212> DNA		
<212> DNA <213> Artificial Sequence		
(213) Aftificial bequence		
<220>		
<223> Antisense Oligonucleoti	de	
<400> 154		
ctatgtgaag ttcgctctta		20
<210> 155		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><220> <223> Antisense Oligonucleoti</pre>	de	
2237 Ancisense Offgonucieoti	.ue	

ISPH-0590US.P1	-57-	PATENT
<400> 155		
cgtgttctca gatcccttcc		20
<210> 156		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 156		
aactaattaa tgaatggacc		20
<210> 157		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 157		
ttactcattt caaggagaaa		20
ccaccacca caaggagaaa		20
<210> 158		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 158		
gaageettet agtttttaet		20
-210- 150		
<210> 159 <211> 20		
2011- 60		

ISPH-0590US.P1	-58-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 159		
cactgtggag agaagccttc		20
<210> 160		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 160		
gcacaacact gtggagagaa		20
<210> 161		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 161		
aatettaata gageaaagee		20
<210> 162		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-59-	PATENT
<400> 162		
gactgagtgt ttggtagtgt		20
<210> 163		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 163		
agcctctacg caattaacac		20
<210> 164		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 164		
ctgaggtgaa tagctcaaaa		20
<210> 165		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	otide	
<400> 165		
ccttttctac tgaggtgaat		20
<210> 166		
<211> 20		
-212- DNA		

ISPH-0590US.P1	-60-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 166		
tagaaatacc agcagacatt		20
<210> 167		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 167		
gcacacgatt acaataggaa		20
<210> 168		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 168		
tccatggcac acgattacaa		20
<210> 169		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 169		

ISPH-0590US.P1	-61- I	PATENT
tcagatccat ggcacacgat		20
<210> 170		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 170		
aggtgccatc cagccttatg		20
<210> 171		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 171		
gccctcagcc tgaggtgcca		20
<210> 172		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 172		
agctttagaa tcttgaaaat		20
-210- 172		
<210> 173		
<211> 20		
<212> DNA <213> Artificial Sequence		

-62-

ISPH-0590US.P1

PATENT

-63-

ISPH-0590US.P1

<210> 180
<211> 20
<212> DNA

<213> Artificial Sequence

PATENT

ISPH-0590US.P1	-64-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 180	·	
gatactgata atcctccact		20
<210> 181		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 181		
aatcctgcaa atcgtgatac		20
<210> 182		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 182		
agcagcccta acaaaagttt		20
<210> 183		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
.400. 193		
<400> 183		20
aaattttcca ttttaaatgc		20

ISPH-0590US.P1	-65-	PATENT
<210> 184		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 184		
cacttacaga gaatacaccc		20
<210> 185		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 185		
gagctacact tacagagaat	•	20
<210> 186		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
The second of gonder could		
<400> 186		
aacatggcca cctcgctttt		20
3, 3, 4, 4, 4		
<210> 187		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-66-	PATENT
<223> Antisense Oligonucleotide		
<400> 187		
gccttaacca ccagcataac		20
<210> 188		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 188		
aggccctggc cttaaccacc		20
<210> 189		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 189		
tggagaggcc ctggccttaa		20
<210> 190		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 190		
tcatgcctca aaactgccct		20
<210> 191		

ISPH-0590US.P1	-67-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 191		
ctaaaaagca ttagtcatgc		20
<210> 192		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
(223) Alitiselise Oligoliucieotiue		
<400> 192		
agaatteetg tgetgaagga		20
<210> 193		
<211> 20		
<212> DNA		-
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 193		
ggtcttgaga attcctgtgc		20
<210> 194		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
12207 And 15 Chibe Of 190 nucleof the		

ISPH-0590US.P1	-68-	PATENT
<400> 194		
actcaggtct tgagaattcc		20
<210> 195		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 195		
ggacattcct attataaaaa		20
<210> 196		
<211> 20		
<211> 20 <212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
<400> 196		
acacggacgt atcaagttca		20
<210> 197		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 197		
cctctgtatg tttccgtggc		20
		
<210> 198		
<211> 20		

ISPH-0590US.P1	-69-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 198		
tgcgaggagt tgactggcgc		20
<210> 199		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 199		
ggcaaagtgc gaggagttga		20
<210> 200		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 200		
ggaaactcac atcgtcctgc		20
010 001		
<210> 201		
<211> 20 <212> DNA		
<212> DNA <213> Artificial Sequence		
The state of the s		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-70-	PATEN
<400> 201		
ggctgcttac cccaaagcca		20
<210> 202		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 202		
ctcagttgca tttcactgta		20
<210> 203		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	tide	
<400> 203		
gtgggaagag aagatgtcca		20
<210> 204		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleo	cide	
<400> 204		
gccttctcta aggttttaag		20
<210> 205		
<211> 20		
<212> DNA		

ISPH-0590US.P1	-71-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 205		
tagaataccc ctgccaggag		20
<210> 206		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 206		
aacttettae etggaatgee		20
<210> 207		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 207		
ccttgcaaaa gagctcatac		20
<210> 208		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 208		

ISPH-0590US.P1	-72-	PATENT
cttcactcac ctcctctgga		20
<210> 209		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 209		
tttgcactgt ctctccccac		20
<210> 210		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 210		
tcagtggttt cttacacttg		20
<210> 211		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 211		
tttgtagtac ctacattgac		20
<210> 212		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

-73-

PATENT

ISPH-0590US.P1

```
<210> 216
<211> 912
<212> DNA
<213> M. musculus
<400> 216
teccaqtete eqqqqttte tetttqetqq tqeetqqaaq tqqqqqtaga tqtqaagtta 60
gaccgagttg tgagtggcgg tagccagtgt cttcctcact tctttcgatg cgatttcccc 120
agtgaaccat ttgctaagcg ccagaccaaa gtcctaggct tgcacacaat tcctacttgg 180
aatcacgtta tcctgctctt aaagaaaagt cacccatcag cccacagcaa agaggataag 240
gagaaaaaga ggggaggaga gacggagaag ctagaggcag agggaacagc agattgcgcc 300
tagccaatgg aaaaggcagg acaaggtggc accaaattct ctttggccaa tgacaagacg 360
ggcttcacag gaggcacatt agcatttatc cccaggcagg gggttggagc agcgcccct 420
gttgatgcct tcagcatccc ggcgcctcca aggtctactc tggaatctac ttggctttct 480
ttecegttet tggteeegee etetetetet ecetecetee eteceteeet teetecetee 540
ctccctcct ccctcctcc ctcacctcca cgcctggctt ccttggctag ctatctctgc 600
gctctttacc ctttgctggc agccgataaa agggggctga ggaaatactg aacacggtca 660
teccategee tgetetacee tttaaaatee cageecagga gatetgtgea cageeagaee 720
gggctgaaca cccatcccga gagtcaggag ggcaggtttc caagcgcagt tccgccactc 780
gectacacca acgggetecg gaaccgaagt ccacgetega teteageact gggaaagtga 840
ggcgagcaac tgactatcat catgccggcc cacatgctcc aagaggtgag cttccagaag 900
                                                                  912
cggccctcgc tc
<210> 217
<211> 288
<212> DNA
<213> M. musculus
<400> 217
ttgcagatct ccagttctta cacgaccacc accaccatca ctgcacctcc ctccggaaat 60
gaacgagaga aggtgaagac agtgcccctc cacctggaag aagacatccg tcctgaaatg 120
aaaqaaqata ttcacqaccc cacctatcaq qatqaggaqq gacccccgcc caagctggag 180
tacgtctgga ggaacatcat tctcatggtc ctgctgcact tgggaggcct gtacgggatc 240
atactggttc cctcctgcaa gctctacact gccctcttcg gtgagcag
                                                                  288
<210> 218
```

<211> 144 <212> DNA <213> M. musculus

<400> 218

ttgcagggat tttctactac atgaccagcg ctctgggcat cacagccggg gctcatcgcc 60 tctggagcca cagaacttac aaggctcggc tgcccctgcg gatcttccta atcattgcca 120 acaccatggc gttccagtaa gaag 144

<210> 219

<211> 221

<212> DNA

<213> M. musculus

<400> 219

ttccagaaat gacgtgtacg actgggcccg agatcaccgc gcccaccaca agttctcaga 60 aacacacgcc gaccctcaca attcccgccg tggcttcttc ttctctcacg tgggttggct 120 gcttgtgcgc aaacacccgg ctgtcaaaga gaagggcgga aaactggaca tgtctgacct 180 gaaagccgag aagctggtga tgttccagag gaggtaaggg a 221

<210> 220

<211> 247

<212> DNA

<213> M. musculus

<400> 220

atgtaggtac tacaagcccg geeteetget gatgtgette ateetgeea egetggtgee 60 etggtactge tggggegaga ettttgtaaa eageetgtte gttageacet tettgegata 120 eaetetggtg eteaaegcea eetggetggt gaacagtgee gegeatetet atggatateg 180 eeeetacgae aagaacatte aateeeggga gaatateetg gttteeetgg gtgeegtggg 240 taagtea 247

<210> 221

<211> 3660

<212> DNA

<213> M. musculus

<400> 221

ttgcaggcga gggcttccac aactaccacc acaccttccc cttcgactac tctgccagtg 60 agtaccgctg gcacatcaac ttcaccacgt tcttcatcga ctgcatggct gccctgggcc 120 tggcttacga ccggaagaaa gtttctaagg ctactgtctt agccaggatt aagagaactg 180

gagacgggag tcacaagagt agctgagctt tgggcttctg agttcctgtt tcaaacgttt 240 totggcagag atttaatatt orgitigatta actaacaact ggarattgot atcggggtgt 300

totggcagag atttaatatt tocggtacag tattottata aaatgagaaa gotttgatca actaacaact ggarattgot atcggaaa gotttgatca aaatgagaaa gotttgatca aaatgagaaa gotttgatca aaatgagaaa gotttgatca aaatgagaaa gotttgatca aaatgagagaa tattaacotat tocggtacag tannarraan cargonanaa ganarraan tannarraan cargonanaa ganaraaarar cargonanaa ganarraan tannarraan cargonanaa ganaraaarar cargonanaa ganarraan cargonanaa ganarraan cargonanaa ganaraaarar cargonanaa ganaraaarar cargonanaa ganarraan cargonanaa ganaraan cargonanaa ganar taatgatgca tttaacctat tccggtacag tattcttata aaatgagaaaa gctttgatca 360

taatgatgca tttaacctat tccggtacag taggattaac catgccacaa gacattatat 420

taatgatgca tttaacctat tttatttagc taggattaac catgccacaa aaaraacttt aaatatat tttatttagc catgtcacaa caacacatat tttatttagc caarttraca caaracacttt aaacatat catgccacaa aaracaarata caarttraca caaracactat aaracaarata aaracaarata caarttracaa caaracacaa catgccacaa gacattatat ISPH-0590US.P1 aataaatttg aacattotat acagagagga toaaagccaa ggaacatgot tgtttcttot 600

aataaatttg aacattotat acagagagga toaaagccatgat tgtttctrot 660

aataaatttg aacattotat acagagagga toaaagccatgat tgtttcctot for tatroacoot 660

tagggtgagc atggtgctca gcccctgttt gtttgcatgg tgtccagctt tatroacoot 660

tagggtgagc atggtgctca gcccctgttt gtttgcatgg tgtccagctt tatroacoot 660

aataaaatttg aacattotat acagaagagga tcaaagccaa ggaacatgot tatrocacoot 660

aataaaatttg aacattotat acagagaggagtt gtttgcatgg

tagggtgagc atggtgctca gcccctgttt gtttgcatgg

tagagagtgaacatgot tgtttcttct

tagagagagga tcaaagccaa ggaacatgot tgtttcttctct

acagagagagga tcaaaagccaa ggaacatgot tgtttcttct

tarocacoot 660 tagggtgagc atggtgctca gtccctgttt gtttgcatgg tgtccagctt tgtttcttct 600

tagggtgagc atggtgctca gtccctgttt accaaccact ggcctgtgtc rgarararar ratrartrat aaarantrat ratrartrata aaaarantrat ratrartrata aaaarantrata ratrartrata aaaa ratrartrata aaaa ratrartrata ratrartrata aaaa ratra ctgtcatcac caccttcagg caaatagttg accaaccact ggcctgtgtc tgtccaccct 720

ctgtcatcac caccttcagg caaatagttg aaatactgat cottcctcct gaatacatca 720

ctgtcatcac caccttcagg caaatagttg aaatactgat cottcctcct gaatacatca 720

ctgtcatcac caccttcagg caaatagttg aaatactgat cottcctcct gaatacatca 720

ctgtcatcac caccttcagg caaatagttg aacaaccact ggcctgtgtc tgtcctcct gaatacatca 720

ctgtcatcac caccttcagg caaatagttg aacaaccact ggcctgtgtgtc tgtccaccct 720

ctgtcatcac caccttcagg caaatagttg aacaaccact gacaaccact ggcctgtgtgtc tgtccaccac 720

ctgtcatcac caccttcagg caaatagttg aacaaccact gaatactgat cottcotcct gaatacatcac 720

ctgtcatcac caccttcagg caaatagttg aacaaccact gacaaccact gacaaccaccact gacaaccact gacaaccact gacaaccact gacaaccact gacaaccact gacaaccact gacaaccact ga ccaaagccca ggccaccttt ctgttttctg aaatactgat ccttcctcct gaatacatcc 780

ccaaagccca ggccaccttt ctgttttctg tcaaataggg atagaggcaag aranarrara ann agaaarrat arraarraa ranagagaag aranaraa aranarrara anaraaarrat aranagagaagaccttt ctgttttctg aaatactgat caaataggg atagagccaag aranarrara anaraaarrat aranagaarrat arraarraa ranagaaarrat aranagaaarrat aranagaa aranagaaarrat aranagaaarrat aranagaaarrat aranagaaarrat aranagaaa aranagaaa aranagaaarrat aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaaaraa aranagaa aranag aggttgtgct agatgggatg gagaaattat cttcatttga tacagaggaag agagagagag annrarran akn tttgtaagta aagatggaag agatagcatg cgtggtatga tttgtaagta ararraana anannrarn ararraana anannrarna anan caaagacccc aggcctctct gcttggcatg cctcctttct gtccatcctc tgaaccccag 1020

ttcagagtg aagggggtta atgaagtcttc 1140

caaagacccc aggcctctct gcttggcatg tttcagagtg aagggggtta aaaadtcttc 1140

caaagacccc aggcctctct gcttggcatg tttcagagtg aagggggtta aaaadtcttc 1140

caaagacccc aggcctctct gcttggcatg tttcagagtg aagggggtta aaaadtcttc 1140

caaagacccc aggcctctct gcttggcatg attaaatcat tttcagagtg aaggagtcatagagate trrrcataga aaaadtcttcatagagatg aaggcctctctct gcttggcatg cctcctttct gtccatcatcttct gcctcggcatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatagagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatcatagagatg aaggagatgagagatgagagatgagagatgagagatgagagatgagagatgagagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagatgagagat agattagtga gatttgaata attaaatcat tttcagagtt ttttcatgaa aaaagtcttc 1140
1200
agattagtga gatttgaata acttagaata actgaagatt ttttcatgaa argaafaran 1200
tgtgctaggg gagggtttta gcttttggta actgaagat frafaantaa argaafaran aranntaana frafaantaa aranntaana trafaantaa aranntaana trafaanaan trafaana tgtgctaggg gagggtttta gcttttggta actgaagatt ttttcatgga aaaagtcttc 1140

tgtgctaggg gagggtttta gcttttggta actgaagata ttttgtcgggg acagatatgg 1200

tgtgtcaatg tgcctagaac tgataactaa acagctgaca trantranaa carnaaanta trantranaa carnaaanta trantranaa carnaaanta trantranaa carnaaaanta trantrantran 1260 gtgttcaatg tgatagaac tgataactaa acagotgaca tttgtcgggg acagatatgg 1200

gtgttcaatg tgcctagaac tgataactaa acagotgaca catgaaacta noornoon 1220

gtgttcaatg tgataactaa agcaaaatct tcacttggaa catgaaacta noornoon 1220

gtgttcaatg tgataactaa agcaaaatct noornoon no aaaataatog aaggacccga ggtgttgcct gggttgccag tttctttcgt ggctgggcag 1320

taagaggtgc atttccagat 1380

taagaggtgc gaactagtga gggtgagggg cagtgtctgt aagtagctgc taagaggtgc cattgcttta 1440

gaactagtga ggttgagggg cagtgtctgt aggtaggtgt tggctccatc cattgcttta 14nn

free faa gggtgagggg cagtgtctgt aagtagctgt tree faa free faa gaagtefaa free faa free gaagcccttg gggaacatct gccagggatc cgcatggtgt ttttgaacct tccatgcctt 1500

ttttgaacct tccatgcctt 1500

ttttgaacct tccatgcctt 1500

ttttgaacct tccatgctta 1500

cttcccatgg tttttgaacct consentrat 1500

cttcccatgg tttttgaacct consentrat 1500

cttcccatgg tctttgaacct consentrat 1500

cttcccatgg tctttgaacct consentrat 1500

cttcccatgg cttttgaacct consentrat 1500

cttcccatgg cttttgaacct consentrat 1500

cttcccatgg cttttgaacct consentrat 1500

cttcccatg ctttgaacct 1500

cttcccatgg ctttccctatgaacct 1500

cttcccatgg ctttccctatgaacct 1500

cttcccatgg ctttcatgaacct 1500

cttcccatgaacct 1500

cttccatgaacct 1500 gttcctcct tggattgtgt agaaacttgg cttcccatgg ttttgaacct tccatgctt 1500

gtttcctcct tggattgtgt agaaacttgg tgctgcctag gaagctctta cccacctgat 1600

ctttgctttg tggccaccca gcctgcctag trretrere emanarama entantrere emanara ctttgctttg tggccaccca gcctgcctag tgctgcctag ggagctctta cccacctgat 1600

ctttgctttg tggccaccca gcctgcctat tttctttctc cggacatgca gcragtrarn 1600

ctttgcttttg tggccaccca gcctgcctttt tttctttctc cggacatgca gcragtrarn 1600

ctttgcttttg tggccaccca gcctgcctat tttctttctc cggacatgca gcragtrarn 1600

ctttgcttttg tggccaccca gcctgcctat tttctttctc cggacatgca gcragtrarn 1600

cttttgcttttg tggccaccca gcctgcctat ttcttttttctc cgacacatgca gcctgcctat ttctttctc cgacacatgca gcctgcctat ttctttctcc cgacacatgca gcctgcctatgca gcctgca gcctgcctatgca gcctgca tgagtgtatc aagagcaccc aggacttcag gaagcagagc caggtgtatc aagagcacct gtagttcag gaagcagagc caggtgtatc aagagcacct gtagctagcag gaagcagagc aagagcagafr aanaaaan 1ann aagagagtgt gaagcttcag gaagcagagc aagaraarr aanaaaan aanaa aanaa aanaa aanaa aanaa aanaa aanaa aagagcagagag gaagagcagaa aanaa cgtgggtgtg gaagagctgt gtagcttcag gaagcagagc caggtgattt caggaaagct nernarra anreasean lach cttccagatc cttccagatc cttccagatc cttccagatc cttccagatc cttccagatc rerannana formarra anarran anreasean lach control cttccagatc cttccagatc rerannana formarran anarran anarran anreasean ternarran anarran cttccagatc cttccagatc rerannana formarran anarran anarran anarran anarran control cttccagatc cttccagatc rerannana formarran anarran anarra cttccagatc ctccctacct ccaactcatg tgcctctgtc acagtgattt caggaaagct 1800

cttccagatc ctccctacct ccaactcatg tgcctctgtc acagtgattt caggaaagct actcggttta gaaagtctct ctggtttgtg agttaacagc 1aon

cttccagatc ctccctacct ccaactcatg tgcctctgtc acagtgatta aranaann rantrarraa 1aon

tggtagaccc tctagcaaca tctcggttca gaaagtctct aranaann rantrarraann rantrarr tctgtctcgg tgtgtgtcat ccatgcaggc aggtagtggt acagtggtgat rananntnan naggtranta trananntnan naggtranta tranannan nagg ttcaggaaga gggtctgctt cctgaagcca gtgtgtgatg aaaagtgact gagacctgat 2220

ttcaggaaga gggtctgctt cctgaagcca tgtcacacag tccaggggca rotrftdron 2280

ttcaggaaga agacctgata cctaacactc tgtcacacag tcaraana cratraana cratraana cratraana cratraana cratraana accaggaaga agacctgata atranarraa tartraana cratraana cratra atctaaggtg agacctgata cctaacactc tgtcacacag tccagggcca tctcttgtcc 2280

atctaaggtg agacctgata cctaacactcag tattttagaa ccatcaagaa raraarraa raraarara naaanarra agaaagtct agaaggaaac atcactrrra qaanraanta raraaaqraa naaanaaraa agaaagtct agaaggaaaac craarrrra qaanraanta cataarraanta cataarraanta agaaagtct agaaggaaac cataarraanta cataarraanta cataarraanta cataarraanta agaaagtct agaaggaaaac cataarraanta cataaraanta cataarraanta cataarraanta cataarraanta cataaraa aggaaagtot agaagaagac atcacatcag tattttagaa ccatcaacca totottgtoc 2340

totottgtoc 2340

totottgtoc 2340

totottgtoc 2340

aggaaagtot agaagaagac atcacatcag tattttagaa ccatcaacca totottgtoc 2340

aggaaagtot agaagaagac atcacatcag tatttta gaactggctg tgtaaggtgc caaacactca 3400

aggaaagtot agaagaagac ctggttttta gaactggctg tgtaaggtgc conntatot 32110

aggaaagtot agaagaagac ctggttttta gaactggctg tgtaaggccca atccagaggc ctggttttta agaactggctg agaatagaccca atccagaggc ctggttttta gaactggctg tgtaaggccca atccagaggc ctggttttta gaactggctg tgtaaggccca atccagaggc ctggttttta gaactggctg tgtaaggctg agaactggctg agaactggctg tgtaaggctg tgtaaggc gttcacttgt agaatcagaa atctcataga aaaatcactg tagatctact raarraraa nen ctgttttgtt gaagtagaaa atggttttac ttttctaggt catagatgcc tgattataaa 2520

```
qatqaacaat aaaatcaqct ttctttcttt ctcttctgat cttattcccc agatctgatt 2580
caggccatgt tccaaagcaa ggctacattg aggtcctggt gtctttaagt aaaggacatc 2640
tttcaqatcc tctcaaagaa ggatttataa cagtttccag atgaatgtac taatagcttt 2700
qqqtqcctta tctctttcct aatctqtaqt qcctqtqaqc tcaqtctcac tccttccctt 2760
agcccqqaqa ccccttagat cgagtqggaa tagtcaagag gctggctgga gagtcatcag 2820
tacattggtt tgcagaaatc ttttacaggc tacattttgg aattttttt tttttagtaa 2880
gtgatcaaat ttggtgggaa gtaattcgag tgtattcgat tgtattgtcg tcctcgttat 2940
cattgtcaaa catgttatag acggcagttg gcactggggc tgctaatctc tgggtgtagt 3000
ctctgaaact gtagctccag tgaggtggtg tgaaaggtta gcaaagccac catctgctgg 3060
tgctccagcc aaggtgcctc ttagccactg aattgctatg ttatcctttc tcttgtaaca 3120
aacccaccc agagataaag cctttaatca acccaagaaa ctcctgggct aagtatctga 3180
caqteteaca teteaacaqt gtgaattaag tgtecatage ateageteag gaggacaete 3240
tgggagagtg ctgacaaaaa agggttatta atactgacct actacttcaa gggcagttct 3300
gaggtgatta gagctttttt taaaaaccaa gtatttgggg atcctcagca gaggtattca 3360
tacagactcc caaagaacta tatatgttcc tgagaccatc gtttagtcta cattgctctt 3420
cccagagact gacagatatg accagtcaaa gtgcaagact acctacccac tgccatgaaa 3480
accattgcag gaaacctttc ccttcctgaa tgagattttt tttttccctt tttatgtggg 3540
gtaattattt gtgacccaag tgtaatttgg atgatttcca ttaatatcaa ctcttgaagc 3600
ctacttqtac tgattgagat tgtatttgtt cctaataaaa gtggatctgg ttgtactgtc 3660
```

```
<210> 222
```

<213> M. musculus

<220>

<221> CDS

<222> (862)...(1929)

<223> Antisense Oligonucleotide

<400> 222

tcccagtctc ccggggtttc tctttgctgg tgcctggaag tgggggtaga tgtgaagtta 60 gaccgagttg tgagtggcgg tagccagtgt cttcctcact tctttcgatg cgatttcccc 120 agtgaaccat ttgctaagcg ccagaccaaa gtcctaggct tgcacacaat tcctacttgg 180 aatcacgtta tcctgctctt aaagaaaagt caccaatcag cccacagcaa agaggataag 240 gagaaaaaga ggggaggaga gacggagaag ctagaggcag agggaacagc agattgcgcc 300 tagccaatgg aaaaggcagg acaaggtggc accaaattct ctttggccaa tgacaagacg 360 qqcttcacag gaggacaatt agcatttatc cccaggcagg gggttggagc agcgcgccct 420

<211> 5383

<212> DNA

	= 0	~
ISPH-0590US.P1	-78-	PATENT

guu	gatgo	CC	ccago	Jacco	o g	Jege	1000	a ay	Julia	acte	cgg	acci	ac	ccggc		400
ttc	ccgtt	ct	tggto	ccg	cc c1	tetet	ctct	ccc	ctcc	ctcc	ctc	cctc	cct	tcct	ccctcc	540
ctc	cctcc	cct	ccct	cct	ec et	tcac	ctcca	a cgo	cctg	gctt	cctt	ggct	ag	ctato	etctgc	600
gcto	cttta	acc ·	cttte	gctgg	gc ag	gccga	ataaa	a agg	gggg	ctga	ggaa	aatao	ctg	aacad	ggtca	660
tcc	catco	gcc	tgcto	ctaco	cc ti	ttaaa	aatco	cag	gccca	agga	gato	ctgt	gca	cagco	cagacc	720
ggg	ctgaa	aca	cccat	cccg	ga ga	agtca	aggag	a aad	caggt	ttc	caag	gegea	agt	tccg	ccactc	780
gcct	acad	cca	acggg	gete	eg ga	aacc	gaagt	cca	acgct	cga	tct	cagca	act	gggaa	aagtga	840
ggcg	gagca	aac	tgact	atca	at c	atg	ccg	gcc	cac	atg	ctc	caa	gag	atc	tcc	891
						Met	Pro	Ala	His	Met	Leu	Gln	Glu	Ile	Ser	
						1				5					10	
agt	tct	tac	acg	acc	acc	acc	acc	atc	act	gca	cct	ccc	tcc	gga	aat	939
Ser	Ser	Tyr	Thr	Thr	Thr	Thr	Thr	Ile	Thr	Ala	Pro	Pro	Ser	Gly	Asn	
				15					20					25		
gaa	cga	gag	aag	gtg	aag	aca	gtg	ccc	ctc	cac	ctg	gaa	gaa	gac	atc	987
Glu	Arg	Glu	Lys	Val	Lys	Thr	Val	Pro	Leu	His	Leu	Glu	Glu	Asp	Ile	
			30					35					40			
cgt	cct	gaa	atg	aaa	gaa	gat	att	cac	gac	ccc	acc	tat	cag	gat	gag	1035
Arg	Pro	Glu	Met	Lys	Glu	Asp	Ile	His	Asp	Pro	Thr	Tyr	Gln	Asp	Glu	
		45					50					55				
gag	gga	ccc	ccg	ccc	aag	ctg	gag	tac	gtc	tgg	agg	aac	atc	att	ctc	1083
Glu	Gly	Pro	Pro	Pro	Lys	Leu	Glu	Tyr	Val	Trp	Arg	Asn	Ile	Ile	Leu	
	60					65					70					
atg	gtc	ctg	ctg	cac	ttg	gga	ggc	ctg	tac	999	atc	ata	ctg	gtt	ccc	1131
Met	Val	Leu	Leu	His	Leu	Gly	Gly	Leu	Tyr	Gly	Ile	Ile	Leu	Val	Pro	
75					80					85					90	
tcc	tgc	aag	ctc	tac	act	gcc	ctc	ttc	aaa	att	ttc	tac	tac	atg	acc	1179
Ser	Cys	Lys	Leu	Tyr	Thr	Ala	Leu	Phe	Gly	Ile	Phe	Tyr	Tyr	Met	Thr	
				95					100					105		
agc	gct	ctg	ggc	atc	aca	gcc	ggg	gct	cat	cgc	ctc	tgg	agc	cac	aga	1227
Ser	Ala	Leu	Gly	Ile	Thr	Ala	Gly	Ala	His	Arg	Leu	Trp	Ser	His	Arg	
			110					115					120			

ISPH-0590US.P1	-79-	PATENT
	ctg ccc ctg cgg atc ttc cta atc att gcc aac Leu Pro Leu Arg Ile Phe Leu Ile Ile Ala Asn 130 135	1275
	aat gac gtg tac gac tgg gcc cga gat cac cgc Asn Asp Val Tyr Asp Trp Ala Arg Asp His Arg 145	1323
	tca gaa aca cac gcc gac cct cac aat tcc cgc Ser Glu Thr His Ala Asp Pro His Asn Ser Arg 160 165 170	1371
	tct cac gtg ggt tgg ctg ctt gtg cgc aaa cac Ser His Val Gly Trp Leu Leu Val Arg Lys His 180 185	1419
	aag ggc gga aaa ctg gac atg tct gac ctg aaa Lys Gly Gly Lys Leu Asp Met Ser Asp Leu Lys 195 200	1467
	atg ttc cag agg agg tac tac aag ccc ggc ctc Met Phe Gln Arg Arg Tyr Tyr Lys Pro Gly Leu 210 215	1515
	atc ctg ccc acg ctg gtg ccc tgg tac tgc tgg Ile Leu Pro Thr Leu Val Pro Trp Tyr Cys Trp 225 230	1563
	aac agc ctg ttc gtt agc acc ttc ttg cga tac Asn Ser Leu Phe Val Ser Thr Phe Leu Arg Tyr 240 245 250	1611
	gcc acc tgg ctg gtg aac agt gcc gcg cat ctc Ala Thr Trp Leu Val Asn Ser Ala Ala His Leu 260 265	1659
tat gga tat cgc ccc	tac gac aag aac att caa tcc cgg gag aat atc	1707

Tyr Gly Tyr Arg Pro Tyr Asp Lys Asn Ile Gln Ser Arg Glu Asn Ile

															cac	1755
Leu	Val	Ser	Leu	Gly	Ala	Val	Gly	Glu	Gly	Phe	His	Asn	Tyr	His	His	
		285					290					295				
acc	ttc	ccc	ttc	gac	tac	tct	gcc	agt	gag	tac	cgc	tgg	cac	atc	aac	1803
Thr	Phe	Pro	Phe	Asp	Tyr	Ser	Ala	Ser	Glu	Tyr	Arg	Trp	His	Ile	Asn	
	300					305					310					
ttc	acc	acg	ttc	ttc	atc	gac	tgc	atg	gct	gcc	ctg	ggc	ctg	gct	tac	1851
Phe	Thr	Thr	Phe	Phe	Ile	Asp	Cys	Met	Ala	Ala	Leu	Gly	Leu	Ala	Tyr	
315					320					325					330	
gac	cgg	aag	aaa	gtt	tct	aag	gct	act	gtc	tta	gcc	agg	att	aag	aga	1899
Asp	Arg	Lys	Lys	Val	Ser	Lys	Ala	Thr	Val	Leu	Ala	Arg	Ile	Lys	Arg	
				335					340					345		
act	gga	gac	999	agt	cac	aag	agt	agc	tga	gcti	tggg	gct t	ctga	agtto	cc	1949
Thr	Gly	Asp	Gly	Ser	His	Lys	Ser	Ser	*							
			350					355								

tgtttcaaac gttttctggc agagatttaa tattctgttg attaactaac aactggatat 2009 tgctatcggg gtgttaatga tgcatttaac ctattccggt acagtattct tataaaatga 2069 gaaagctttg atcacgtttt gaggtaataa atattttatt tagctaggat taaccatgcc 2129 acaagacatt atatattct aagcacacat gataaatgca tatacaattt tgcacaacag 2189 ctttaaataa taacaataaa tttgaacatt ctatacagag aggatcaaag ccaaggaaca 2249 tgctgttttg atgctagggt gagcatggtg ctcagtccct gtttgtttgc atggtgtcca 2309 getttgttte ttetetgtea teaceacett eaggeaaata gttgaceaae caetggeetg 2369 tgtctgtcca ccctccaaag cccaggccac ctttctgttt tctgaaatac tgatccttcc 2429 tectgaatac atcetectt gtteetaget teaagactge tgeeteaaat agggatagag 2489 caagtccccg ctgcaggttg tgctagatgg gatggagaaa ttatcttcat ttgatacaga 2549 gcaagtagat tgtctcgaga gaaaagttag catgcgtggt atgatttgta agtaaagatg 2609 gaagagagag agagagaga agagagagag agagagagag agagagaggt agccatatct 2669 aacagcctac ttaccaaaga ccccaggcct ctctgcttgg catgcctcct ttctgtccat 2729 cctctgaacc ccagagatta gtgagatttg aataattaaa tcattttcag agtgaagggg 2789 gttaatgcag ggtctgtgct aggggagggt tttagctttt ggtaactgaa gattttttca 2849 tggaaaaagt cttcgtgttc aatgtgccta gaactgataa ctaaacagct gacatttgtc 2909 ggggacagat atggtgtgaa actatgaaaa tataagcaaa atcttcactt ggaacatgaa 2969 actatttcac ttagaaaata atcgaaggac ccgaggtgtt gcctgggttg ccagtttctt 3029

tcgtggctgg gcaggaacta gtgaggttga ggggcagtgt ctgtaagtag ctgctaagag 3089

tcgtggctgg gcaggaacta gtgaggttga ggggcagtgt ctgtaagtag ctgctaagag 3089 Stgcatttcc agatgaagcta gtggaggttga ggggcagtgt ctgtaagtag ctgctaagag 3089

Catronatron trragritor trocktogart granar argragas gatccgcatg gtgttgggctc 3149 Gatccattgc agatgaagcc cttggggaac atctgccagg gatccgcatg gtgttggctc 3149

Catccattgc tttagtttcc tccttggatt gtgtagaaac ttggcttccc atggtttggctc 3149

Controllar controllar contactor ctagatttga 3209 accttccattgc tttagtttcc tccttggatt gtgtagaaac ttggctccc atggttttga 3209

**Tancrace tragetttcc tccttggatt gtgtagaaac ttggctccc atggttttga 3209

**Tancrace tragettcc tccttggatt gtgtagaaac ttggctccc atggttttga 3209 cttaccace tgattcttc tgacattct tcttttggc ctagtggcgc ctagtggctgc ctagtggaagct 3269

**Archanachar tacctagaagaagct 3269

**Archanachar taccagaagaagct tcttttttctt tctccggaca 3329 Cttacccacc tgattcttc
tgcagctagt tgcctgagtg tatcaagagc acccaggact ttctttctt
tctcccggaca j329

rataaaaaaaa ctataaaaact tocaggact tgctgctgtc caggcctgtt 3389 cotcoccag tatcaagago acccaggact tgotgotgoto caggocotgoto 3389

Cotcoccag tatcaagago acccaggact tgotgotgoto caggocotgoto 33439 ccacctttct gtggcttcca gatcctcct acttccaggaagca gagccaggtg 3449

Artranaa anntrontaan aanatotoa tegtgtagct catgtgcctc tgtcacaggtg 3509

Artranaa anntrontaan aanatotoa tegtgcctc tgtcacagtg 3509 attcaggaa agcttggtag acctccct acctccaact catgtgcctc tgtcacagtg 3509

accactttet gtgacagtg acctccct acctccaact catgtgcctc tgtcacagtg 3509

accactttet gtgacagtg 3509 atttcaggaa agcttggtag accetetage aacatetegg ttcagaaage cteteteggte 3569

agttaa cagetagetage aagtgetgte ttgteetage gagttaacca etgaatgega 3629 Eggagttaa cagctcagct aagtgctgtt ttgtctcagt gagttaacca ctgaatgcga 3629

Grantra naanaanaan roontrtoon roarnaanaan roontaanaan 3744 gtgcgctttg caaggtaatg tggctttggc tcggagtaga cagcatatgc acttctccct 3689
cractoaaaaa aaaaattc ccaatgc aggcaggtag tggtacagt 3749 gtgcgctttg caaggtaatg tggctttggc tgatccatgc aggcaggtag tggtacagtg 3749

ctgctgaaaag gaagaagttc cccattttat ctgttaaaac accagagaca tggtacagtg 3749

aaaaaaacacac accagagaca tgggcaagtg 3749 ctgctgaaag gaagaagtte cccattttat ctgttaaaac accagagaca tcacttcag aagagggtet gettectgaa gccagtggt gatgaaagtg 3809

Gartaaagaag gaagaggtet ctgttaaaac accagagaca tgggcaagtg 3809

Gartaaac actctatcac accagagaca tgggcaagtg 3809 Graatgaac toacticagg aagagggtot gottootgaa gocagtigte gatgaaaagt 3869

Graatgagacc toacticagg aagagggtot gottootgaa gocagtigte gatgaaaagt 3869

Graacacto ctataccaa ggtgagacct gatacctaac actotigtcac acagtocagg 3929

And to tataccaa actotigtcac acagtocagg 3929 gactgagacc tgatatctaa ggtgagacct gatacctaac actctgtcac acagtccagg 3929

annaththir otherapa constant one of the same of the sa gccaacagtg ctataggaaa gtctagaaga aaacatcaca tcagtatttt agaaccatca 3989

ctcaatccag aggcctggtt tttagaactg gctgtgtaag 4049 accatetett
gtgccaaaca gtccetatag cecaatecag aggeetggtt tttagaactg getgtgaag 4049
anaronanto tagtagaate agageetttt ttccecceta tgttaattga 4109 acacgcgctc tgagttcac ttgtagaatc agagcctttt ttccccccta tgttaattga 4109

Annual content of the con acacgcgctc tgagctgttt tgttgaagta gaadatctca tagaaaaatc actgtagatc 4169

contrastra tagccctctg gaaatgcctt tgagatggtt ttacttttct aggtcataga 4229 tactgaccta tagccctctg gaaatgcctt tgagatggtt ttactttctc aggtcataga 4229

cccaaatct ataaagatgaa caataaaatc agctttcttt ctttccttctctctc tgatcataga 4229

arangement atattccaaacc arangement ara tgcctgatta taaagatgaa caataaaatc agctttcttt ctttctcttc gatcttatt 4289

aagaagatgaa caataaaatc agctttcttt ctttctcttc tgatcttatt 4289 aagtaaagga catctttcag atgttccaaa gcaaggctac attgaggtcc tggtgtcttt 4349

Aranaanan ortaanan or aagtaaagga catctttcag at cctctcaa agaaggattt ataacagttt ccagatgaat 4409

cantcorte contractor aaancorte aaatcg tagtgcctgt gagctcagtc 4469 gtactaatag ctttgggtgc cttatctctt tcctaatctg tagtggcctgt gagctcagtc 4469

agatcgagtg ggaatagtca agaggctggc gagctcagtc 4469 tgagagatca ccttagcccg gagacccctt agatcgagtg ggaatagtca agaggctggac 4529

**Trtrtrta araaaraara ggttgcaga aatcttttac aggctacatt ttggaattt ttggaattt 4589

**Trtrtrta araaaraara aggctacatt ttggaattt 4589 tttttttta cagtacatt ggtttgcaga aatcttttac aggctacatt ttggaatttt 4589

choricotron tratoarran canararran aranarran ar gtcgtcctcg ttatcattgt caaacatgtt atagacggca gttggcactg ggggtgtatt ccaatgtatt 4649

trictagata tagacggca gttggcactg ggggtgtatt ccaatgtatt 4649

aactatagacggca gttggcactg ggggtgtatt 4769 gtcgtcctcg ttatcattgt caaacatgtt atagacggca gttggcactg gggctgctaa 4709

cctctgggtg tagtctctga aactgtagct ccagtgaggt ggtggaagg gttagcaaag gttagcaaag gttagcaaag gttagcaaag 4769

cctcttagcc actgaattqc tatgttatcc 4829 CCaCcatcty

tttctcttgt ctggtgctcc

accadaggtg cctcttagcc actgaattgc tatggtatcc 4829

cactalagat ctcaaccaa gaaactccaa gaaactcctg 4829

cacaccatcty

cacaccatcty

accacatcty

cacacatctocaa gaaactcccaa gaaactccctg 4829

cacaccatcty

cacacatctocaa cacaccaa gaaactccctg 4829

cacaccatcty

cacaccatcty

cacacatctocaa cacaccaa gaaactccctg 4829

cacacatcaccaa cacaccaa gaaactccctg 4829 goctaagtat ctgacagtct cacateteaa cagtgtgaat taagtgteaa gaaacteetg 4889

actocoogae actoc tcaggaggac ctgacagtct cacatctcaa cagtgtgaat taagtgtcca tagcatcagc 4949

tcagaggagac actctgagag agtgctgaca cagtgtgaat taagtgtcca tagcatcagc 4949

**Trictoagogta Attagaactt thirthaaaaa contactactact soog acctactact 5009 tcaaggagaa actctgggaa agtgctgaca aaaaaagggtt attaatactg acctactact 5009

Accass trongaaaa craceaagtattt gaggatattt gaggatactc 5069

Accass trongaaaa accaagtattt gaggatactc 5069 agcagaggta ttctgaggtg attagagctt tttttaaaaa ccaagtattt ggggatcctc 5069

tctacattoc tcttcccaaaga ctccccaaaga actatatatg ttcctgagac catcgtttag 5129 agcagaggta ttcatacaga ctcccaaaga actatatatg ttcctgagac catcgtttag 5129

ccactgcat oaaaaccatt ocaaga actatatatg ttcctgagac catcgtttag 5129

ccactgcat oaaaaccatt ocaagaaccaga tatgaccagt caaagtgcaa gactacctac 5189 ccactgcat gaaaaccatt gcaggaaaac tatgaccagt caaagtgcaa gactacctac 5189

nttttaa tagaccaga gactgacaga tatgaccagt caaagtgcaa gactacctac 5189

attraraan caaaaccatt gcaggaaacc tttcccttcc tgaatgagat tttttttttc 5249 ccttttatg tggggtaatt atttgtgacc caagtgtaat ttggatgatt tccattaata 5309

gtactgattg agattgtatt tgttcctaat aaaagtggat 5369

ISPH-0590US.P1	-82-	PATENT
ctggttgtac tgtc		5383
<210> 223		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 223		
agatetettg gageatgtgg		20
<210> 224		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 224		
cttctctcgt tcatttccgg		20
3		
<210> 225		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 225		
cttctttcat ttcaggacgg		20
<210> 226		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

ISPH-0590US.P1	-83-	PATENT
222		
<220>		
<223> Antisense Oligonucleotide		
<400> 226		
tecetectea teetgatagg		20
<210> 227		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
3		
<400> 227		
cctccagacg tactccaget		20
010 000		
<210> 228		
<211> 20 <212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 228		
aggaccatga gaatgatgtt		20
<210> 229		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 229		
acaggeetee caagtgeage		20
		20

•

-84-

PATENT

ISPH-0590US.P1

ISPH-0590US.P1	-85-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 233		
gctccagagg cgatgagccc		20
<210> 234		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 234		
cgagecttgt aagttetgtg		20
<210> 235		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 235		
gcaatgatta ggaagatccg		20
geaucgacea ggaagaceeg		20
<210> 236		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
-		
<400> 236		
tacacgtcat tttggaacgc		20

ISPH-0590US.P1	-86-	PATENT
<210> 237		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 237		
ggtgatcteg ggeecagteg		20
<210> 238		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 238		
cgtgtgtttc tgagaacttg		20
egegegeee egagaaceeg		20
<210> 239		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
.400. 220		
<400> 239		
cggctttcag gtcagacatg		20
<210> 240		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-87-	PATENT
<223> Antisense Oligonucleotide		
<400> 240		
ctggaacatc accagcttct		20
<210> 241		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<223> Antisense Oligonucieotide		
<400> 241		
agcacatcag caggaggccg		20
<210> 242		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 242		
tgaagcacat cagcaggagg		20
3 3 33 33		
<210> 243		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 243		
gtetegeece ageagtacea		20
3 3 . 3		
<210> 244		

ISPH-0590US.P1	-88-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 244		
gcaccagagt gtatcgcaag		20
<210> 245		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 245		
caccagccag gtggcgttga		20
<210> 246		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
(22) And I sense of I gonder could		
<400> 246		
tagagatgcg cggcactgtt		20
<210> 247		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

.

ISPH-0590US.P1	-90-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 251		
gcggtactca ctggcagagt		20
<210> 252		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 252		
ggtgaagttg atgtgccagc		20
<210> 253		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 253		
tcctggctaa gacagtagcc		20
<210> 254		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-91-	PATENT
<400> 254		
cccgtctcca gttctcttaa		20
<210> 255		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
.400. 255		
<400> 255		20
ttgtgactcc cgtctccagt		20
<210> 256		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 256		
tcagctactc ttgtgactcc		20
212 257		
<210> 257 <211> 21		
<211> 21 <212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 257		
acaccagaga catgggcaag t		21
<210> 258		
<211> 22		
<212> DNA		

ISPH-0590US.P1	-92-	PATENT
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 258		
catcacacac tggcttcagg aa		22
<210> 259		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Probe		
<400> 259		
ctgaagtgag gtccattag		19
<210> 260		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 260		
gaaggtgaag gtcggagtc		19
<210> 261		
<211> 20		
<212> DNA		
<212> DNA <213> Artificial Sequence		
(21) Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 261		

ISPH-0590US.P1	-93-	PATENT
gaagatggtg atgggatttc		20
<210> 262		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Probe		
<400> 262		
caagetteee gtteteagee		20
<210> 263		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide	2	
<400> 263		
ggaageteae etettggage		20
<210> 264		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide	•	
<400> 264		
ctgctcaccg aagagggcag		20
<210> 265		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

ISPH-0590US.P1	-94-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 265		
gtagtagaaa atccctgcaa		20
<210> 266		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 266		
tecettacet ectetggaac		20
<210> 267		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 267		
tgacttaccc acggcaccca		20
<210> 268		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 268		
gtggaagccc tegcctgcaa		20
J. J		

-95-

PATENT

ISPH-0590US.P1

ISPH-0590US.P1	-96-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 272		
taggaattgt gtgcaagcct		20
<210> 273		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 273		
atctgctgtt ccctctgcct		20
<210> 274		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 274		
tccagagtag accttggagg		20
<210> 275		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
.220		
<220> <223> Antisense Oligonucleotide		
(223) Microense Origonacieotide		
<400> 275		
ctagccaagg aagccaggcg		20

ISPH-0590US.P1	-97-	PATENT
<210> 276		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 276		
gcagagatag ctagccaagg		20
<210> 277		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 277		
ttttatcggc tgccagcaaa		20
<210> 278		
<211> 278		
<211> 20 <212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
_		
<400> 278		
ggatgaccgt gttcagtatt		20
<210> 279		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-98-	PATENT
<223> Antisense Oligonucleotide		
<400> 279		
tggctgtgca cagatctect		20
<210> 280		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 280		
tcagcccggt ctggctgtgc		20
<210> 281	•	
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 281		
gcgcttggaa acctgccctc		20
<210> 282		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 282		
tgtaggcgag tggcggaact		20
<210> 283		

ISPH-0590US.P1	-99-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 283		
gtggacttcg gttccggagc		20
<210> 284		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 284		
ttgctcgcct cactttccca		20
<210> 285		
<211> 20		
<212> DNA <213> Artificial Sequence		
(213) Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 285		
gtgggccggc atgatgatag		20
<210> 286		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-100-	PATENT
<400> 286		
gaactggaga tetettggag		20
<210> 287		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
_		
<400> 287		
tagaaaatcc cgaagagggc		20
<210> 288		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 288		
ggtcatgtag tagaaaatcc		20
3333		
<210> 289		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 289		
gcgctggtca tgtagtagaa		20
<210> 290		
<211> 20		
\ _ \C_U		

ISPH-0590US.P1	-101-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 290		
ggattgaatg ttcttgtcgt		20
<210> 291		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 291		
tcccgggatt gaatgttctt		20
<210> 292		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 292		
gatattetee egggattgaa		20
<210> 293		
<211> 20		
<212> DNA	·	
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-102-	PATENT
<400> 293 gtagccttag aaactttctt		20
<210> 294 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 294 cccaaagctc agctactctt		20
<210> 295 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 295 aacaggaact cagaagccca		20
<210> 296 <211> 20 <212> DNA <213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
<400> 296 cagaatatta aatetetgee		20
<210> 297 <211> 20 <212> DNA		

ISPH-0590US.P1	-103-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 297		
agttgttagt taatcaacag		20
<210> 298		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
1225 imersense origonaereoerae		
<400> 298		
aattgtatat gcatttatca		20
<210> 299		
<211> 20		
<212> DNA <213> Artificial Sequence		
Alloy interritoral bequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 299		
ctgtatagaa tgttcaaatt		20
<210> 300		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 300		

ISPH-0590US.P1	-104-	PATENT
acagcatgtt ccttggcttt		20
<210> 301		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 301		
tagcatcaaa acagcatgtt		20
<210> 302		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 302		
accatgetca ceetageate		20
<210> 303		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 303		
aaggatcagt atttcagaaa		20
JJ. 1 - 1 J J		-
<210> 304		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

20

ggcaacccag gcaacacctc

-106-

PATENT

ISPH-0590US.P1

<210> 311
<211> 20
<212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-107-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 311		
ctggctctgc ttcctgaagc		20
<210> 312 <211> 20		
<211> 20 <212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
<400> 312		
gctgagctgt taactcacaa		20
<210> 313		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 313		
cacacccga gacagatcaa		20
<210> 314		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 314		
caggaagcag accetettee		20 .

ISPH-0590US.P1	-108-	PATENT
<210> 315		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 315		
aatactgatg tgatgttttc		20
<210> 316		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 316		
atggttctaa aatactgatg		20
.010. 017		
<210> 317		
<211> 20 <212> DNA		
<213> Artificial Sequence		
(213) Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
Charles of February		
<400> 317		
actgagtgtt tggcacctta		20
		
<210> 318		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-109-	PATENT
<223> Antisense Oligonucleotide		
<400> 318		
ggctctgatt ctacaagtga		20
<210> 319		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 319		
tcaacaaaac agctcagagc		20
<210> 320		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 320		
gattttctac ttcaacaaaa		20
<210> 321		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 321		
		20
cttaaagaca ccaggacctc		20
<210> 322		

ISPH-0590US.P1	-110-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
400 200		
<400> 322		20
catctggaaa ctgttataaa		20
<210> 323		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 323		
ctaagggaag gagtgagact		20
<210> 324		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<223> Antisense Oligonucieotide		
<400> 324		
ttacttccca ccaaatttga		20
<u> </u>		
<210> 325		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-111-	PATENT
<400> 325		
tgacaatgat aacgaggacg		20
<210> 326		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-220		
<220> <223> Antisense Oligonucleotide		
1227 120130 01130140100140		
<400> 326		
cagatggtgg ctttgctaac		20
<210> 327		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 327		
ttgttacaag agaaaggata		20
<210> 328		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 328		
tcagatactt agcccaggag		20
<210> 329		
<211> 20		

ISPH-0590US.P1	-112-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220> <223> Antisense Oligonucleotide		
(223) Ancisense Origonacieocide		
<400> 329		
tgttgagatg tgagactgtc		20
<210> 330		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 330		
cacctcagaa ctgcccttga		20
.210. 221		
<210> 331 <211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 331		20
getetaatea eeteagaaet		20
<210> 332		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-113-	PATENT
<400> 332 ggagtctgta tgaatacctc		20
ggageoogea egaacacocc		20
<210> 333		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 333		
tctctgggaa gagcaatgta		20
<210> 334		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 334		
gtaggtagtc ttgcactttg		20
<210> 335		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<u>.</u>		
<400> 335		
aggaagggaa aggtttcctg		20
-210- 226		
<210> 336 <211> 20		
<211> 20 <212> DNA		

ISPH-0590US.P1	-114-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 336		
tacacttggg tcacaaataa		20
<210> 337		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
.400. 337		
<400> 337		
aatcatccaa attacacttg		20
<210> 338		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 338		
cttcaagagt tgatattaat		20
ecceangage egacaceane		20
<210> 339		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 339		

atacaatctc aatcagtaca 20 <210> 340 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 340 cacttttatt aggaacaaat 20 <211> 341 <211> 18 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 341 ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400 341 ccctttatt aggaacaat 21 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <221> DNA <213> Artificial Sequence <220> <221> DNA <211> 21 <212> DNA <213 Artificial Sequence <220> <221> DNA <211> Artificial Sequence <220> <221> DNA <213- Artificial Sequence <220> <221> DNA <213- Artificial Sequence <221> Artificial Sequence <221> Artificial Sequence <221> Artificial Sequence <211> DNA <211> 20 <2122 DNA <213- Artificial Sequence	ISPH-0590US.P1	-115-	PATENT
<pre><211> 20 <212> DNA <213> Artificial Sequence </pre> <pre><220> <223> Antisense Oligonucleotide <400> 340 cacttttatt aggaacaaat</pre>	atacaatctc aatcagtaca		20
<pre><212> DNA <213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 340</pre>	<210> 340		
<pre><220> <223> Antisense Oligonucleotide <400> 340 cacttttatt aggaacaaat</pre>	<211> 20		
<pre><220> <223> Antisense Oligonucleotide <400> 340 cacttttatt aggaacaaat</pre>	<212> DNA		
<pre><223> Antisense Oligonucleotide <4400> 340 cacttttatt aggaacaaat</pre>	<213> Artificial Sequence		
<pre><223> Antisense Oligonucleotide <4400> 340 cacttttatt aggaacaaat</pre>			
<pre><400> 340 cacttttatt aggaacaaat</pre>			
<pre>cacttttatt aggaacaaat</pre>	<223> Antisense Oligonucleotide		
<pre>cacttttatt aggaacaaat</pre>	<400 340		
<pre><210> 341 <211> 18 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 341 ttccgccact cgcctaca</pre>			20
<pre><211> 18 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 341 ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 </pre>	00000000 0550000000		
<pre><212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 341 ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA</pre>	<210> 341		
<pre><213> Artificial Sequence <220> <223> PCR Primer <400> 341 ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA</pre>	<211> 18		
<pre><220> <223> PCR Primer <400> 341 ttccgccact cgcctaca</pre>	<212> DNA		
<pre><223> PCR Primer <400> 341 ttccgccact cgcctaca</pre>	<213> Artificial Sequence		
<pre><223> PCR Primer <400> 341 ttccgccact cgcctaca</pre>			
<pre><400> 341 ttccgccact cgcctaca</pre>			
ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA	<223> PCR Primer		
ttccgccact cgcctaca 18 <210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA	.400. 241		
<pre><210> 342 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA</pre>			10
<pre><211> 21 <212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA</pre>	cccegccact cycctaca		10
<pre><212> DNA <213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA</pre>	<210> 342		
<213> Artificial Sequence <220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA	<211> 21		
<pre><220> <223> PCR Primer <400> 342 ctttcccagt gctgagatcg a</pre>	<212> DNA		
<223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA	<213> Artificial Sequence		
<223> PCR Primer <400> 342 ctttcccagt gctgagatcg a 21 <210> 343 <211> 20 <212> DNA			
<pre><400> 342 ctttcccagt gctgagatcg a</pre>	<220>		
<pre>ctttcccagt gctgagatcg a</pre>	<223> PCR Primer		
<pre>ctttcccagt gctgagatcg a</pre>			
<210> 343 <211> 20 <212> DNA			
<211> 20 <212> DNA	cttteccagt getgagateg a		21
<211> 20 <212> DNA	<210> 343		
<212> DNA			
	<213> Artificial Sequence		

ISPH-0590US.P1	-116-	PATENT
<220>		
<223> PCR Probe		
<400> 343		
caacgggete cggaaccgaa		20
<210> 344		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
<400> 344		
gcttgcagga gggaaccagt		20
<210> 345		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 345		
ctaggacttt ggtctggcgc		20
<210> 346		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 346		
gcgcaatctg ctgttccctc		20
- -		

<210> 347	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 347	
agggcgcgct gctccaaccc	20
<210> 348	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 348	
aagaaagcca agtagattcc	20
<210> 349	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 349	
gtgeacagat eteetggget	20
3-3-4-43-4	20
<210> 350	
<211> 20	

<212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-118-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 350		
ctgccctcct gactctcggg		20
<210> 351		
<211> 20		
<212> DNA		•
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 351		
agaactggag atctcttgga		20
<210> 352		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 352		
cctcctcatc ctgataggtg		20
		_ •
<210> 353		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 353		
acgtactcca gcttgggcgg		20
acycacteca gereggergg		20

ISPH-0590US.P1	-119-	PATENT
<210> 354		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 354		
atgttcctcc agacgtactc		20
212 255		
<210> 355 <211> 20		
<211> 20 <212> DNA		
<213> Artificial Sequence		
(213) Altificial bequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 355		
gaatgatgtt cctccagacg		20
<210> 356		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
.220-		
<220> <223> Antisense Oligonucleotide		
22237 Ancisense Origonacieotiae		
<400> 356		
ccatgagaat gatgttcctc		20
<210> 357		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

ISPH-0590US.P1	-120-	PATENT
<223> Antisense Oligonucleotide		
<400> 357		
tecegtacag geeteceaag		20
<210> 358		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 358		
tgtagagett geaggaggga		20
<210> 359		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 359		
gccatggtgt tggcaatgat		20
<210> 360		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 360		
tctgagaact tgtggtgggc		20
<210> 361		

ISPH-0590US.P1	-121-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 361		
gtgtttctga gaacttgtgg		20
<210> 362		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 362		
ggcgtgtgtt tctgagaact		20
<210> 363		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
<400> 363		
aattgtgagg gtcggcgtgt		20
<210> 364		
<210> 364 <211> 20		
<211> 20 <212> DNA		
<213> Artificial Sequence		
boquonoc		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.P1	-122-	PATENT
<400> 364		
ccacggcggg aattgtgagg		20
<210> 365		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 365		
aagaagccac ggcgggaatt		20
<210> 366		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 366		
agcagccaac ccacgtgaga		20
<210> 367		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 367		
tgcgcacaag cagccaaccc		20
<210> 368		
<211> 20		

ISPH-0590US.P1	-123-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 368		
gtgtttgege acaageagee		20
<210> 369		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 369		
acageegggt gtttgegeae		20
<210> 370		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 370		
ctttgacagc cgggtgtttg		20
<210> 371		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
_		

ISPH-0590US.P1	-124-	PATENT
<400> 371		
cttctctttg acagccgggt		20
<210> 372		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 372		
ccgcccttct ctttgacagc		20
<210> 373		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 373		
atgtccagtt ttccgccctt		20
<210> 374		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 374		
cagacatgtc cagttttccg		20
-		
<210> 375		
<211> 20		
<212> DNA		

ISPH-0590US.P1	-125-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 375		
caggtcagac atgtccagtt		20
<210> 376		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 376		
gctttcaggt cagacatgtc		20
<210> 377		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><220> <223> Antisense Oligonucleotide</pre>		
(223) Antibense Origonacieotiae		
<400> 377		
teteggettt caggteagae		20
<210> 378		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 378		

ISPH-0590US.P1	-126-	PATENT
cagetteteg gettteaggt		20
<210> 379		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 379		
atcaccaget teteggettt		20
<210> 380		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 380		
ggaacatcac cagetteteg		20
<210> 381		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 381		
ctcctctgga acatcaccag		20
<210> 382		
<211> 20		
<212> DNA		
<213> Artificial Sequence		

-127-

PATENT

ISPH-0590US.P1

-128-

PATENT

ISPH-0590US.P1

<211> 20 <212> DNA

<213> Artificial Sequence

ISPH-0590US.P1	-129-	PATENT
<220>		
<223> Antisense Oligonucleotide		
<400> 389		
ctgttcacca gccaggtggc		20
<210> 390		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 390		
gcggcactgt tcaccagcca		20
<210> 391		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 391		
accaggatat tctcccggga		20
<210> 392		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 392		
tggtagttgt ggaagccctc		20

ISPH-0590US.P1	-130-	PATENT
<210> 393		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<u>-</u>		
<220>		
<223> Antisense Oligonucleotide		
<400> 393		
tactcactgg cagagtagtc		20
<210> 394		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 394		
agcggtactc actggcagag		20
5-55		
<210> 395		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 395		
gtgccagcgg tactcactgg		20
<210> 396		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
-		

ISPH-0590US.P1	-131-	PATENT
<223> Antisense Oligonucleotide		
<400> 396 ttgatgtgcc ageggtactc		20
<210> 397		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
(22) Intersemble officialists		
<400> 397		•
gtggtgaagt tgatgtgcca		20
<210> 398		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 398		
		20
aagaacgtgg tgaagttgat		20
<210> 399		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 399		
cagtagcctt agaaactttc		20
<210> 400		

ISPH-0590US.P1	-132-	PATENT
<211> 20		
<212> DNA		
<213> Artificial Sequence		
•		
<220>		
<223> Antisense Oligonucleotide		
<400> 400		
ccagttetet taateetgge		20
<210> 401		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 401		
ccgtctccag ttctcttaat		20
010 400		
<210> 402		
<211> 20 <212> DNA		
<213> Artificial Sequence		
version and the second		
<220>		
<223> Antisense Oligonucleotide		
<400> 402		
taacaccccg atagcaatat		20
<210> 403		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><220> <223> Antisense Oligonucleotide</pre>		
12237 Michaeliae Origoniucieotide		

ISPH-0590US.P1	-133-	PATENT
<400> 403		
gagggtggac agacacaggc		20
<210> 404		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 404		
		20
cttgaagcta ggaacaagga		20
<210> 405		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
-		
<220>		
<223> Antisense Oligonucleotide		
<400> 405		
tatggctacc tctctctctc		20
<210> 406		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<pre><223> Antisense Oligonucleotide</pre>		
<400> 406		
ttttcatagt ttcacaccat		20
<210> 407		
<211> 20		

ISPH-0590US.P1	-134-	PATENT
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 407		
tattttctaa gtgaaatagt		20
<210> 408		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 408		
taggcagcac taggcagget		20
<210> 409		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 409		
aggaacaggc ctggacagca		20
<210> 410		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		

ISPH-0590US.Pl	-135-	PATENT
<400> 410		
gagggctata ggtcagtaga		20
<210> 411		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 411		
aagacaccag gacctcaatg		20
<210> 412		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 412		
ccaatgtact gatgactctc		20
<210> 413		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 413		
tcacaccacc tcactggage		20
<210> 414		
<211> 20		
<212> DNA		

ISPH-0590US.P1	-136-	PATENT
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 414		
agtaggtcag tattaataac		20
<210> 415		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 415		
atctcattca ggaagggaaa		20
<210> 416		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 416		
aaattacact tgggtcacaa		20
<210> 417		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 417		

ISPH-0590US.P1	-137-	PATENT
caatctcaat cagtacaagt		20
<210> 418		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Antisense Oligonucleotide		
<400> 418		
ccttccctga aggttcctcc		20